



New AC axial fans - HyBlade®

A new, first-of-its-kind hybrid blade design makes these ebm-papst axial fans even quieter, more powerful and more durable than ever. In designing the HyBlade® fan blades, we have developed a support structure of high-strength, corrosion-resistant aluminium alloy with a jacket of a special, fibre-reinforced plastics. Compared to conventional blades, the optimal aerodynamic shape results in an enormous noise reduction while significantly increasing efficiency. And thus it offers even more advantages for use in refrigeration, heating and ventilation technology.

Revolutionary design

In the field of refrigeration and ventilation, axial fans are widely used, e.g. to cool heat exchangers by making air pass through them. For ages, the ebm-papst external-rotor motor has proved to be the best choice as it has a compact design, with the axial blades directly mounted onto the rotor. However, fans are not only expected to have compact dimensions. Fans are also expected to offer maximum air performance at an absolute minimum of noise.

Until now, the fan blades have been conventionally manufactured of steel or aluminium sheet. To keep up with the increasing demands on efficiency and noise behaviour, ebm-papst set its sights on the development of new blade geometries. In their research, ebm-papst engineers found themselves up against limits caused by the restrictive design potential of the monolithic sheet-metal blade with uniform plate thickness.

To break these barriers and to achieve lower noise and better efficiency, they realised that entirely new principles of design, materials and component structures were necessary. And so, ebm-papst uses their revolutionary hybrid blade design to preserve seemingly incompatible properties by means of hybrid components and structures.

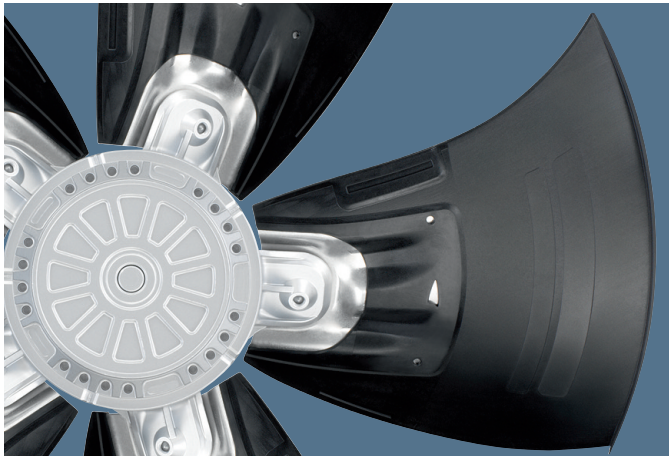
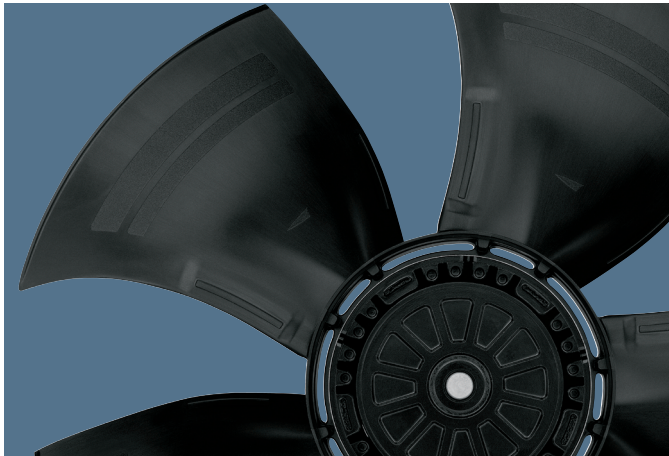
Strong connection

In designing the HyBlade® axial fan blades, ebm-papst was the first to use a support structure of high-strength, corrosion-resistant aluminium alloy with a jacket made of a special, fibre-reinforced plastics.

Using these two materials makes for an ideal combination of their individual characteristics. The aluminium inlet receives the mechanical forces and ensures a durable connection to the rotor during operation, while the plastic encapsulating the support structure gives the blade its optimised aerodynamic shape. At the same time, the plastic jacket has a positive effect on the total weight of the fan. Two aspects add to the considerable noise reduction as compared to conventional blades: The aerodynamically optimised and profiled contour, and the simple addition of "winglets" to the ends of the blades.

In meeting the ebm-papst quality standards, extensive tests and calculations were performed to guarantee the reliability of this new technology. With HyBlade®, ebm-papst has set new standards in fan technology by minimising noise and increasing maximum efficiency.

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

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





GreenTech is pro-active development.

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

GreenTech is ecofriendly production.

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

GreenTech is acknowledged and certified.

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

Our customers profit from this every day.

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

AC axial fans - HyBlade®

Ø 500



- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Pressed-on round sheet steel plate, extrusion-coated in PP plastics
Rotor: Coated in black
- **Number of blades:** 5
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharge holes:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Design with thermal overload protector

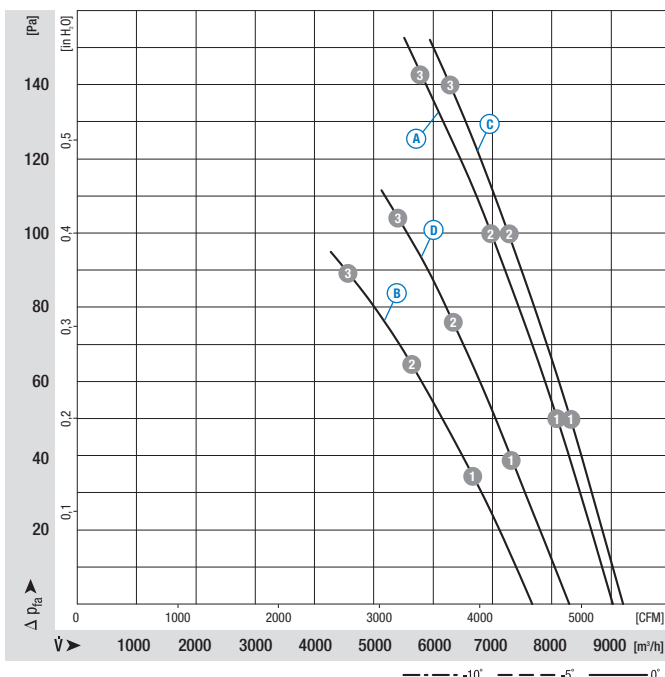
Nominal data

Type	Motor	Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
				VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*4D 500	M4D 110-EF	0°	Ⓐ	3~400 Δ	50	1340	0,71	1,40	—	140	-40..+60	F1b)/F2b)
			Ⓑ	3~400 Y	50	1060	0,48	0,80	—	87	-40..+60	
*4D 500	M4D 110-GF	0°	Ⓒ	3~400 Δ	50	1390	0,72	1,41	—	140	-40..+65	F1b)/F2b)
			Ⓓ	3~400 Y	50	1180	0,55	0,95	—	100	-40..+65	
*6D 500	M6D 110-EF	0°	Ⓔ	3~400 Δ	50	930	0,27	0,69	—	75	-40..+65	F1b)/F2b)
			Ⓕ	3~400 Y	50	800	0,19	0,40	—	55	-40..+65	
*8D 500	M8D 110-EF	0°	Ⓖ	3~400 Δ	50	680	0,15	0,40	—	40	-40..+65	F1b)/F2b)
			Ⓗ	3~400 Y	50	560	0,09	0,18	—	28	-40..+65	

subject to alterations

(1) Nominal data in operating point 3 with maximum load

Curves



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

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

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

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

For detailed information see page 36 ff.

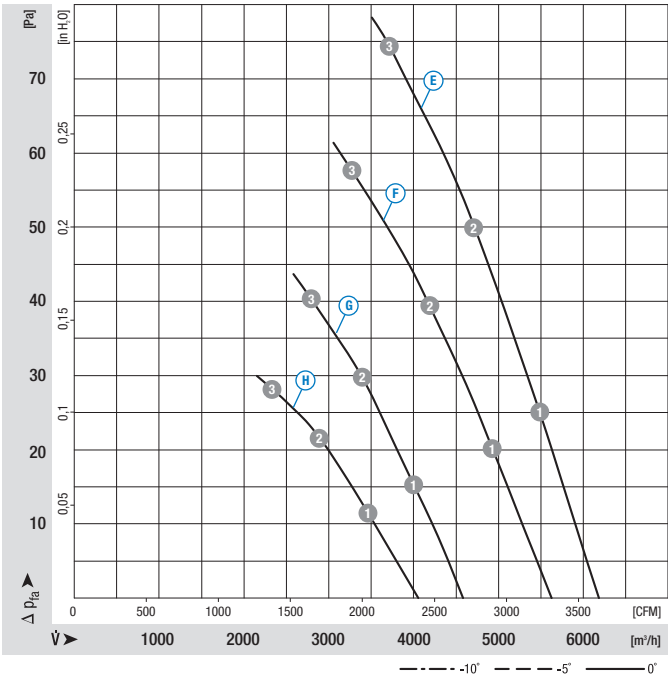
		n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
Ⓐ	1	1375	0,60	1,30	72
Ⓐ	2	1360	0,66	1,34	71
Ⓐ	3	1340	0,71	1,40	71
Ⓑ	1	1135	0,43	0,71	68
Ⓑ	2	1095	0,46	0,76	66
Ⓑ	3	1060	0,48	0,80	65
Ⓒ	1	1410	0,60	1,28	72
Ⓒ	2	1400	0,66	1,34	71
Ⓒ	3	1390	0,72	1,41	71
Ⓓ	1	1245	0,48	0,78	70
Ⓓ	2	1215	0,52	0,84	68
Ⓓ	3	1180	0,55	0,95	68

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow	  		
	Without attachments	With full square nozzle	With guard grille for short nozzle
"V"	A4D 500-AJ03 -01	W4D 500-GJ03 -01	S4D 500-AJ03 -01
"V"	A4D 500-AM03 -01	W4D 500-GM03 -01	S4D 500-AM03 -01
"V"	A6D 500-AJ03 -01	W6D 500-GJ03 -01	S6D 500-AJ03 -01
"V"	A8D 500-AJ03 -01	W8D 500-GJ03 -01	S8D 500-AJ03 -01

Direction of air flow "A" on request

Curves



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

Suction-side noise levels: Lw_A as per ISO 13347, Lp_A measured at 1 m distance to fan axis

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

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For detailed information see page 36 ff.

		n [rpm]	P ₁ [kW]	I [A]	Lw _A [dB(A)]
Ⓔ	1	945	0,23	0,65	64
Ⓔ	2	935	0,25	0,66	62
Ⓔ	3	930	0,27	0,69	63
Ⓕ	1	850	0,16	0,29	62
Ⓕ	2	830	0,17	0,30	59
Ⓕ	3	800	0,19	0,40	59
Ⓖ	1	700	0,13	0,37	58
Ⓖ	2	695	0,13	0,38	55
Ⓖ	3	680	0,15	0,40	54
Ⓗ	1	610	0,08	0,16	55
Ⓗ	2	590	0,08	0,16	51
Ⓗ	3	560	0,09	0,18	50

AC axial fans - HyBlade®

Ø 500

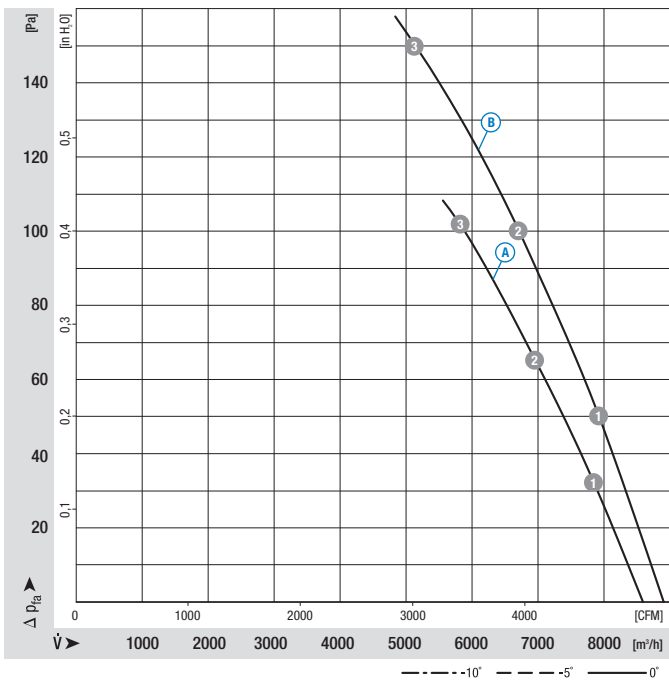


- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Pressed-on round sheet steel plate, extrusion-coated in PP plastics
Rotor: Coated in black
- **Number of blades:** 5
- **Direction of rotation:** counter-clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharge holes:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Design with thermal overload protector

Nominal data		Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
Type	Motor			VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*4E 500	M4E 110-EF	0°	(A)	1~ 230	50	1225	0,60	2,62	10,0/400	100	-40..+55	A2b)
*4E 500	M4E 110-GF	0°	(B)	1~ 230	50	1300	0,68	3,00	12,0/450	150	-40..+65	A2b)
*6E 500	M6E 110-EF	0°	(C)	1~ 230	50	915	0,27	1,18	8,0/400	70	-40..+65	A2b)
*8E 500	M8E 110-EF	0°	(D)	1~ 230	50	665	0,13	0,59	3,0/400	35	-40..+65	A2b)

subject to alterations (1) Nominal data in operating point 3 with maximum load

Curves



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

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

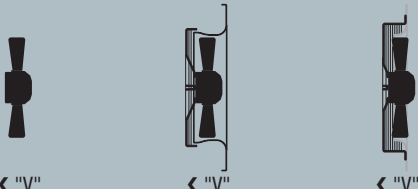
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

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

For detailed information see page 36 ff.

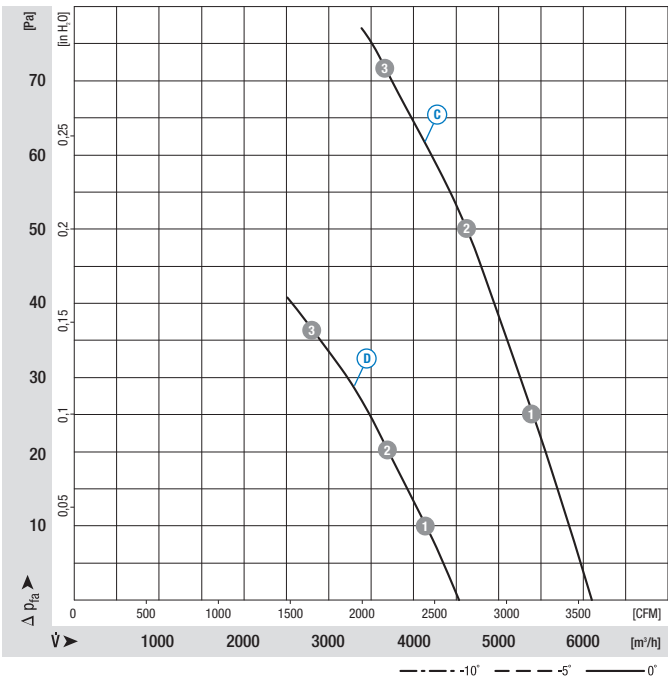
	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
(A) 1	1295	0,53	2,30	71
(A) 2	1270	0,56	2,44	69
(A) 3	1225	0,60	2,62	68
(B) 1	1355	0,57	2,50	72
(B) 2	1330	0,62	2,73	70
(B) 3	1300	0,68	3,00	72

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow			
	Without attachments	With full square nozzle	With guard grille for short nozzle
"V"	A4E 500-AJ01 -01	W4E 500-GJ01 -01	S4E 500-AJ01 -01
"V"	A4E 500-AM03 -01	W4E 500-GM03 -01	S4E 500-AM03 -01
"V"	A6E 500-AJ03 -01	W6E 500-GJ03 -01	S6E 500-AJ03 -01
"V"	A8E 500-AJ03 -01	W8E 500-GJ03 -01	S8E 500-AJ03 -01

Direction of air flow "A" on request

Curves



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

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

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

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

For detailed information see page 36 ff.

	n [rpm]	P ₁ [kW]	I [A]	L _{W,A} [dB(A)]
Ⓒ 1	935	0,24	1,03	64
Ⓒ 2	925	0,25	1,10	62
Ⓒ 3	915	0,27	1,16	63
Ⓓ 1	690	0,11	0,54	59
Ⓓ 2	680	0,12	0,56	56
Ⓓ 3	665	0,13	0,59	54

AC axial fans - HyBlade®

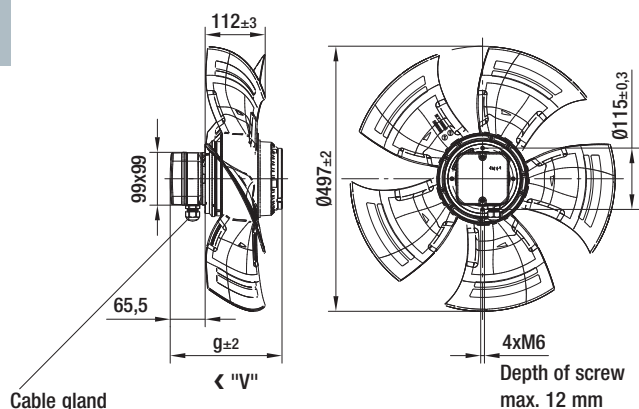
Ø 500 with motor M**110, drawings for direction of air flow "V"



Without attachments

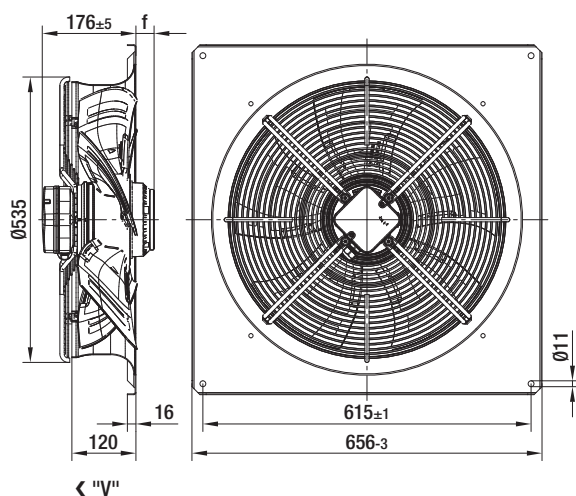
Type	Mass [kg]	g
A4D 500-AJ03 -01	8,5	189,5
A4D 500-AM03 -01	10,5	209,5
A6D 500-AJ03 -01	8,5	189,5
A8D 500-AJ03 -01	8,5	189,5
A4E 500-AJ01 -01	8,5	189,5
A4E 500-AM03 -01	10,5	209,5
A6E 500-AJ03 -01	8,5	189,5
A8E 500-AJ03 -01	8,5	189,5

Internal diameter of the
wall ring at least 503 mm



With full square nozzle

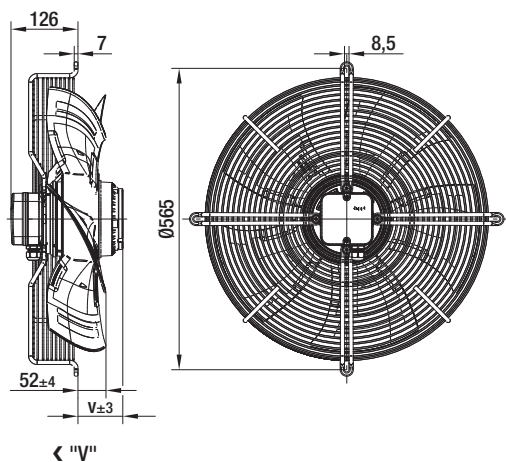
Type	Mass [kg]	f
W4D 500-GJ03 -01	16,0	13,5
W4D 500-GM03 -01	18,0	33,5
W6D 500-GJ03 -01	16,0	13,5
W8D 500-GJ03 -01	16,0	13,5
W4E 500-GJ01 -01	16,0	13,5
W4E 500-GM03 -01	18,0	33,5
W6E 500-GJ03 -01	16,0	13,5
W8E 500-GJ03 -01	16,0	13,5



With guard grille for short nozzle

Type	Mass [kg]	v
S4D 500-AJ03 -01	11,8	64,0
S4D 500-AM03 -01	13,8	84,0
S6D 500-AJ03 -01	11,8	64,0
S8D 500-AJ03 -01	11,8	64,0
S4E 500-AJ01 -01	11,8	64,0
S4E 500-AM03 -01	13,8	84,0
S6E 500-AJ03 -01	11,8	64,0
S8E 500-AJ03 -01	11,8	64,0

Internal diameter of the
wall ring at least 503 mm



AC axial fans - HyBlade®

Ø 560

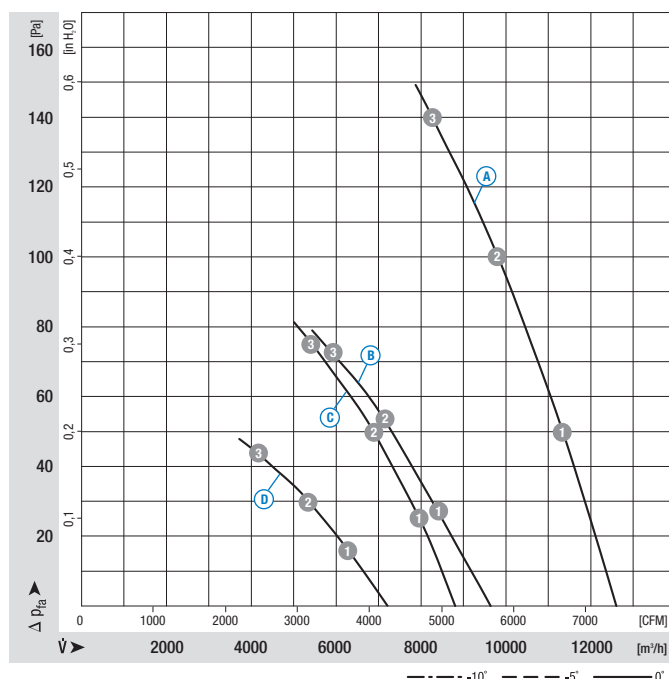


- Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Encased in aluminium
- Number of blades:** 5
- Direction of rotation:** counter-clockwise,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

Nominal data		Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
Type	Motor			VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*4D 560	M4D 110-GF	0°	(A)	3~ 400 Δ	50	1220	1,16	1,95	—	140	-40..+50	F1b)/F2b)
			(B)	3~ 400 Y	50	870	0,65	1,10	—	72	-40..+50	
*6D 560	M6D 110-EF	0°	(C)	3~ 400 Δ	50	870	0,45	0,88	—	75	-40..+65	F1b)/F2b)
			(D)	3~ 400 Y	50	660	0,28	0,48	—	43	-40..+65	
*4E 560	M4E 110-IA	-5°	(E)	1~ 230	50	1275	1,09	4,76	20,0/450	160	-40..+55	A2b)
*6E 560	M6E 110-EF	-5°	(F)	1~ 230	50	895	0,41	1,80	10,0/400	85	-40..+65	A2b)

subject to alterations (1) Nominal data in operating point 3 with maximum load

Curves



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

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

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

For detailed information see page 36 ff.

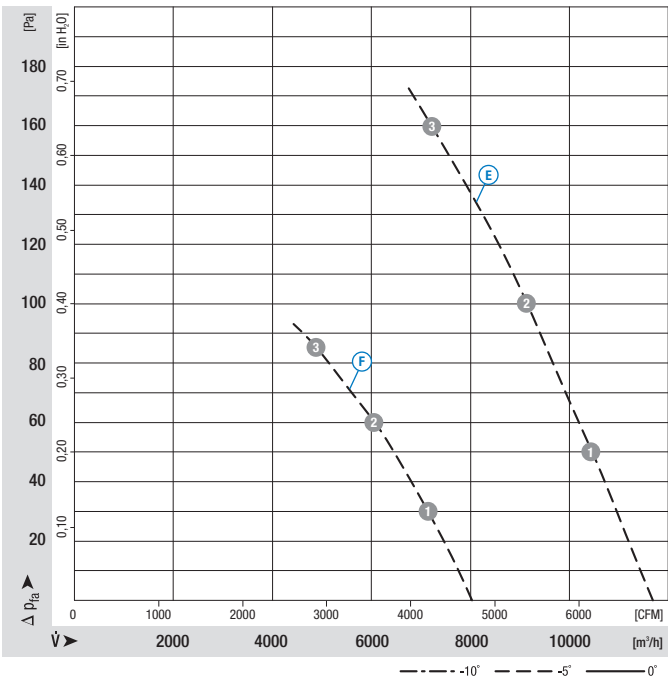
	n [rpm]	P ₁ [kW]	I [A]	L _{WA} [dB(A)]
(A) 1	1270	1,03	1,78	73
(A) 2	1250	1,09	1,87	72
(A) 3	1220	1,16	1,95	77
(B) 1	930	0,62	1,03	65
(B) 2	900	0,64	1,06	65
(B) 3	870	0,65	1,10	67
(C) 1	895	0,39	0,81	65
(C) 2	880	0,42	0,83	65
(C) 3	870	0,45	0,88	69
(D) 1	700	0,26	0,44	58
(D) 2	680	0,27	0,46	59
(D) 3	660	0,28	0,48	61

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow			
	◀ "V"	◀ "V"	◀ "V"
	Without attachments	With full square nozzle	With guard grille for short nozzle
"V"	A4D 560-AM03 -01	W4D 560-GM03 -01	S4D 560-AM03 -01
"V"	A6D 560-AJ03 -01	W6D 560-GJ03 -01	S6D 560-AJ03 -01
"V"	A4E 560-AQ01 -01	W4E 560-GQ01 -01	S4E 560-AQ01 -01
"V"	A6E 560-AK01 -01	W6E 560-GK01 -01	S6E 560-AK01 -01

Direction of air flow "A" on request

Curves



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

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

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

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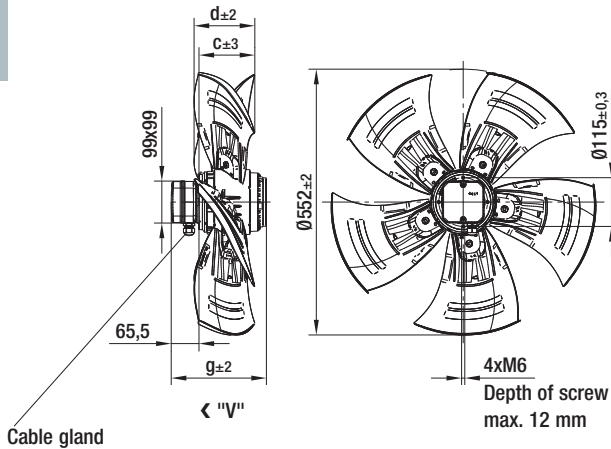
	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
Ⓔ ①	1340	0,95	4,15	75
Ⓔ ②	1315	1,02	4,44	73
Ⓔ ③	1275	1,09	4,76	76
Ⓕ ①	920	0,36	1,60	65
Ⓕ ②	910	0,39	1,72	65
Ⓕ ③	895	0,41	1,80	68

AC axial fans - HyBlade®

Ø 560 with motor M**110, drawings for direction of air flow "V"



Without attachments

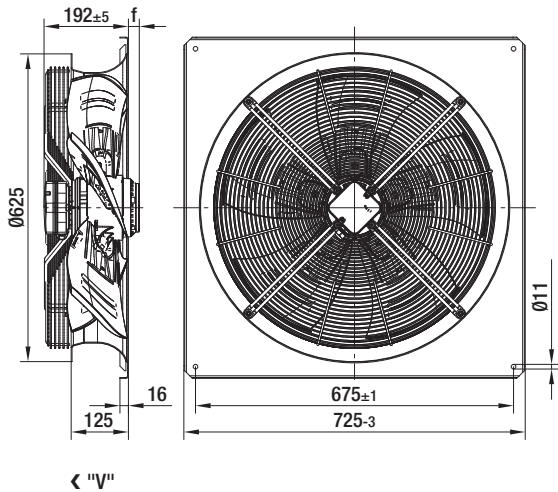


Type	Mass [kg]	c	d	g
A4D 560-AM03 -01	10,5	124,0	134,0	209,5
A6D 560-AJ03 -01	8,5	124,0	134,0	189,5
A4E 560-AQ01 -01	12,5	113,0	115,0	224,5
A6E 560-AK01 -01	8,5	113,0	115,0	189,5

Internal diameter of the wall ring at least 559 mm



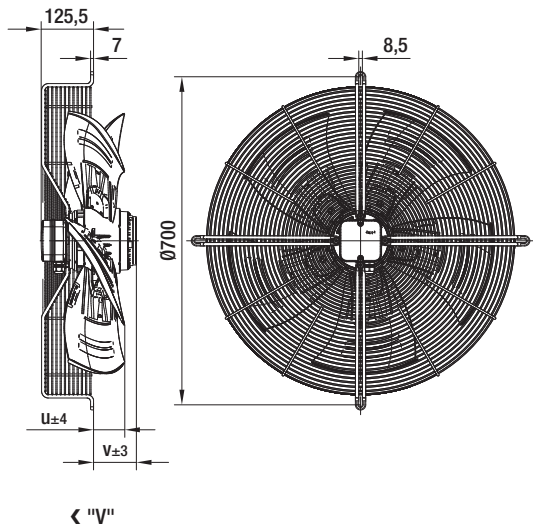
With full square nozzle



Type	Mass [kg]	f
W4D 560-GM03 -01	24,0	17,5
W6D 560-GJ03 -01	22,0	---
W4E 560-GQ01 -01	26,0	32,5
W6E 560-GK01 -01	22,0	---



With guard grille for short nozzle

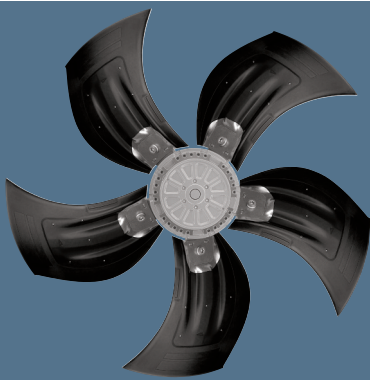


Type	Mass [kg]	u	v
S4D 560-AM03 -01	15,0	88,0	108,0
S6D 560-AJ03 -01	13,0	88,0	88,0
S4E 560-AQ01 -01	17,0	77,0	123,0
S6E 560-AK01 -01	13,0	77,0	88,0

Internal diameter of the wall ring at least 559 mm

AC axial fans - HyBlade®

Ø 630

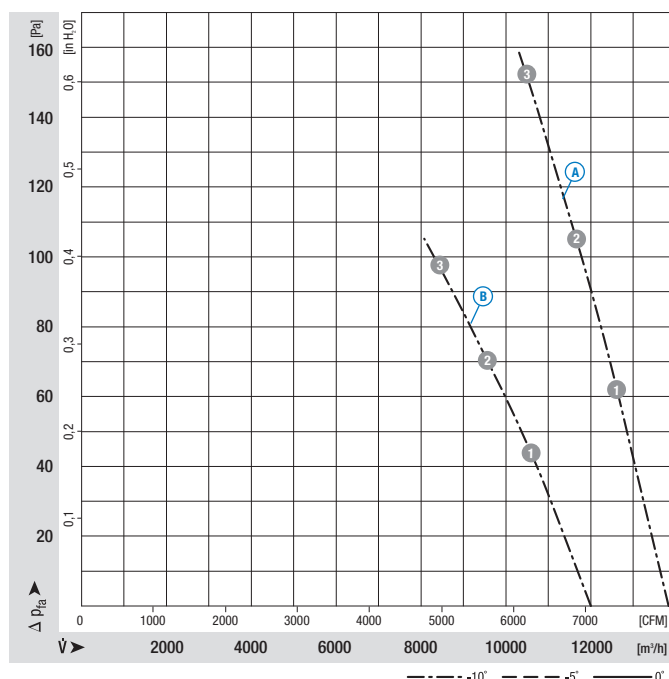


- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Encased in aluminium
- **Number of blades:** 5
- **Direction of rotation:** **A** **B** counter-clockwise, **C** **D** **E** **F** clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharge holes:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Design with thermal overload protector

Nominal data		Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
Type	Motor			VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*4D 630	M4D 110-IA	-10°	A	3~400 Δ	50	1330	1,25	2,48	—	150	-40..+55	F1b)/F2b)
			B	3~400 Y	50	1070	0,84	1,42	—	100	-40..+55	
*4D 630	M4D 138-LA	0°	C	3~400 Δ	50	1320	2,63	4,78	—	220	-40..+60	F1b)/F2b)
			D	3~400 Y	50	1050	1,75	2,95	—	140	-40..+60	
*4D 630	M4D 138-HF	-5°	E	3~400 Δ	50	1310	1,97	3,40	—	200	-40..+60	F1b)/F2b)
			F	3~400 Y	50	1000	1,29	2,10	—	115	-40..+60	

subject to alterations (1) Nominal data in operating point **3** with maximum load

Curves



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

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

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

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

For detailed information see page 36 ff.

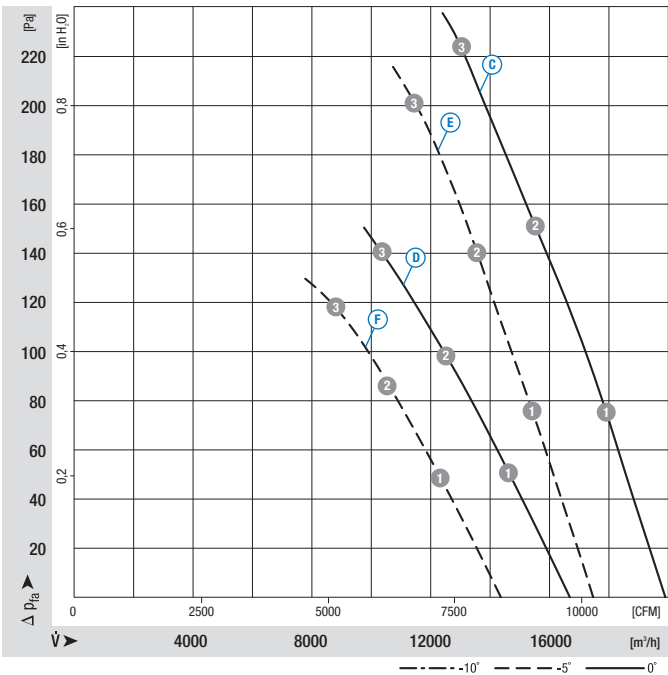
	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
A 1	1370	1,03	2,21	77
A 2	1355	1,14	2,32	75
A 3	1330	1,25	2,48	75
B 1	1140	0,74	1,23	72
B 2	1105	0,78	1,31	71
B 3	1070	0,84	1,42	70

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow			
	Without attachments	With full square nozzle	With guard grille for short nozzle
"V"	A4D 630-AR01 -01	W4D 630-GR01 -01	S4D 630-AR01 -01
"V"	A4D 630-AD01 -01	W4D 630-GD01 -01	S4D 630-AD01 -01
"V"	A4D 630-AH01 -01	W4D 630-GH01 -01	S4D 630-AH01 -01

Direction of air flow "A" on request

Curves



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

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

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

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

For detailed information see page 36 ff.

	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
C 1	1360	2,30	4,29	78
C 2	1345	2,47	4,56	77
C 3	1320	2,63	4,78	80
D 1	1115	1,62	2,71	72
D 2	1080	1,68	2,83	72
D 3	1050	1,75	2,95	74
E 1	1345	1,68	2,94	75
E 2	1325	1,83	3,18	75
E 3	1310	1,97	3,40	78
F 1	1075	1,18	1,97	70
F 2	1035	1,24	2,08	68
F 3	1000	1,29	2,10	70

AC axial fans - HyBlade®

Ø 630

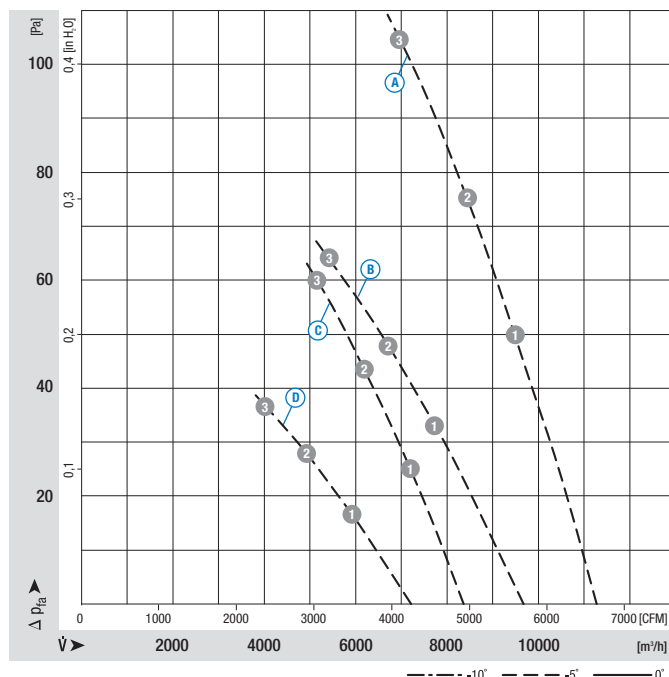


- Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Pressed-on round sheet steel plate, extrusion-coated in PP plastics
Rotor: Coated in black
- Number of blades:** 5
- Direction of rotation:** counter-clockwise, seen on rotor
- Type of protection:** IP 54 (acc. to EN 60529)
- Insulation class:** "F"
- Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- Condensate discharge holes:** Rotor-side
- Mode of operation:** Continuous operation (S1)
- Bearings:** Maintenance-free ball bearings
- Motor protection:** Design with thermal overload protector

Nominal data		Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
Type	Motor			VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*6D 630	M6D 110-GF	-5°	(A)	3~400 Δ	50	890	0,60	1,20	—	105	-40..+65	F1b)/F2b)
			(B)	3~400 Y	50	690	0,40	0,68	—	56	-40..+65	
*8D 630	M8D 110-GF	-5°	(C)	3~400 Δ	50	660	0,33	0,83	—	60	-40..+65	F1b)/F2b)
			(D)	3~400 Y	50	520	0,19	0,39	—	36	-40..+65	
*6E 630	M6E 110-GF	-5°	(E)	1~ 230	50	860	0,60	2,62	14,0/400	100	-40..+55	A2b)
*8E 630	M8E 110-GF	-5°	(F)	1~ 230	50	670	0,34	1,72	7,0/450	60	-40..+65	A2b)

subject to alterations (1) Nominal data in operating point 3 with maximum load

Curves



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

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

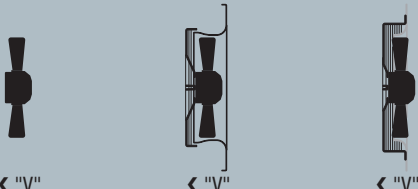
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

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

For detailed information see page 36 ff.

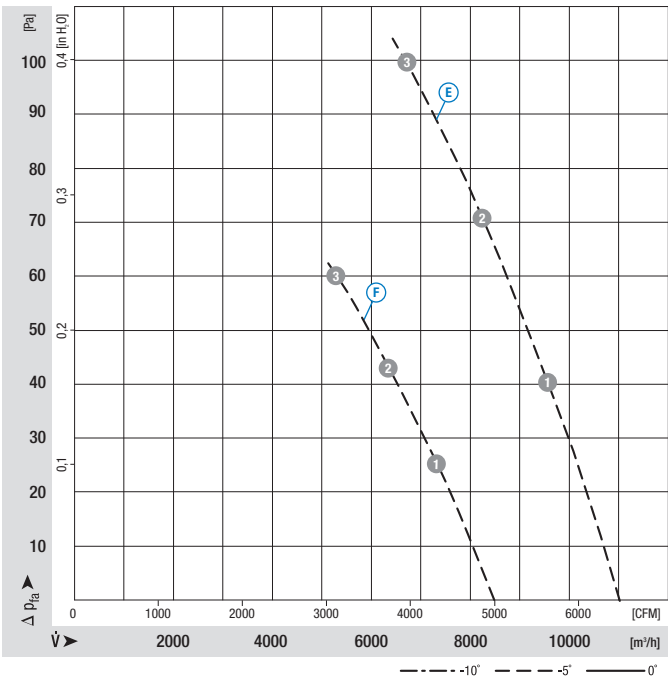
	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
(A) 1	905	0,53	1,15	66
(A) 2	895	0,57	1,19	65
(A) 3	890	0,60	1,20	67
(B) 1	730	0,36	0,63	61
(B) 2	705	0,38	0,66	60
(B) 3	690	0,40	0,68	61
(C) 1	685	0,29	0,81	60
(C) 2	675	0,31	0,82	60
(C) 3	660	0,33	0,83	61
(D) 1	560	0,18	0,35	56
(D) 2	535	0,19	0,37	55
(D) 3	520	0,19	0,39	55

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow			
	Without attachments	With full square nozzle	With guard grille for short nozzle
"V"	A6D 630-AN01 -01	W6D 630-GN01 -01	S6D 630-AN01 -01
"V"	A8D 630-AN01 -01	W8D 630-GN01 -01	S8D 630-AN01 -01
"V"	A6E 630-AN01 -01	W6E 630-GN01 -01	S6E 630-AN01 -01
"V"	A8E 630-AN01 -01	W8E 630-GN01 -01	S8E 630-AN01 -01

Direction of air flow "A" on request

Curves



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

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

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

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

For detailed information see page 36 ff.

	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
Ⓔ ①	905	0,52	2,27	67
Ⓔ ②	885	0,56	2,44	66
Ⓔ ③	860	0,60	2,62	68
Ⓕ ①	690	0,31	1,60	62
Ⓕ ②	680	0,32	1,65	61
Ⓕ ③	670	0,34	1,72	62

AC axial fans - HyBlade®

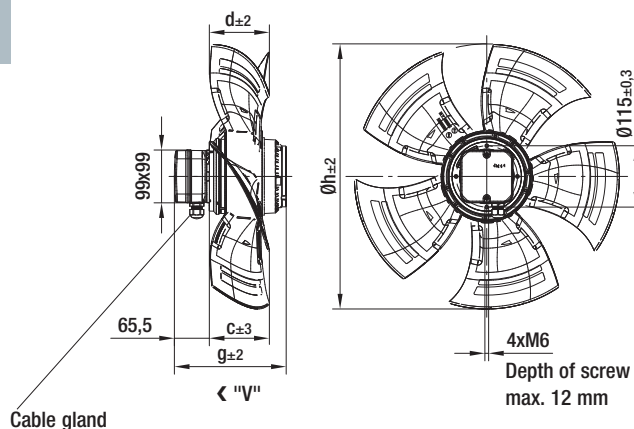
Ø 630 with motor M**110, drawings for direction of air flow "V"



Without attachments

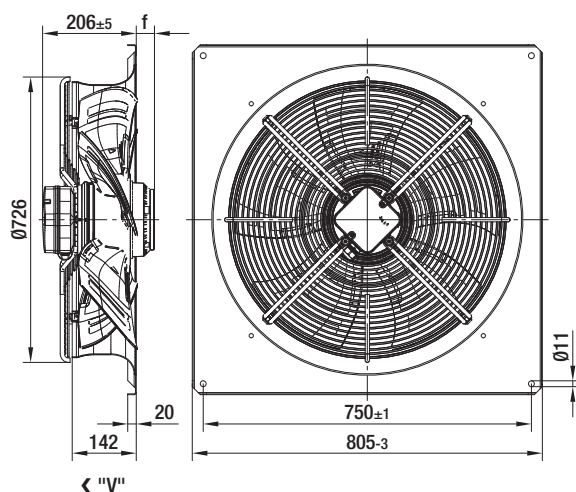
Type	Mass [kg]	c	d	g	h
A4D 630-AR01 -01	14,0	104,0	98,0	224,5	627,0
A6D 630-AN01 -01	12,5	118,0	123,0	209,5	626,0
A8D 630-AN01 -01	12,5	118,0	123,0	209,5	626,0
A6E 630-AN01 -01	12,5	118,0	123,0	209,5	626,0
A8E 630-AN01 -01	12,5	118,0	123,0	209,5	626,0

Internal diameter of the wall ring at least 634 mm



With full square nozzle

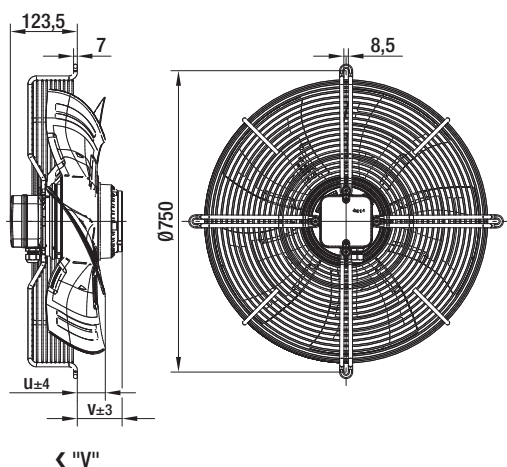
Type	Mass [kg]	f
W4D 630-GR01 -01	28,9	23,5
W6D 630-GN01 -01	27,4	3,5
W8D 630-GN01 -01	27,4	3,5
W6E 630-GN01 -01	27,4	3,5
W8E 630-GN01 -01	27,4	3,5



With guard grille for short nozzle

Type	Mass [kg]	u	v
S4D 630-AR01 -01	19,2	46,0	101,0
S6D 630-AN01 -01	17,7	60,0	86,0
S8D 630-AN01 -01	17,7	60,0	86,0
S6E 630-AN01 -01	17,7	60,0	86,0
S8E 630-AN01 -01	17,7	60,0	86,0

Internal diameter of the wall ring at least 634 mm



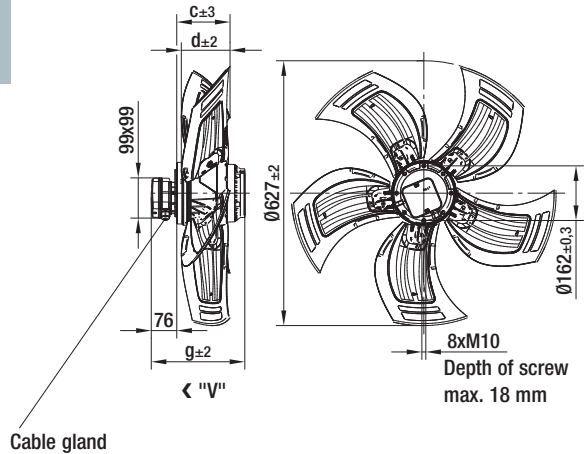
AC axial fans - HyBlade®

Ø 630 with motor M4D138, drawings for direction of air flow "V"



Without attachments

Type	Mass [kg]	c	d	g
A4D 630-AD01 -01	22,3	154,0	144,0	277,0
A4D 630-AH01 -01	18,3	149,0	130,0	252,0



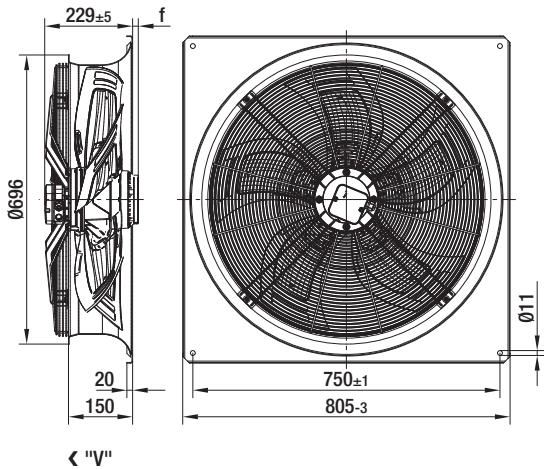
Cable gland

Internal diameter of the wall ring at least 634 mm



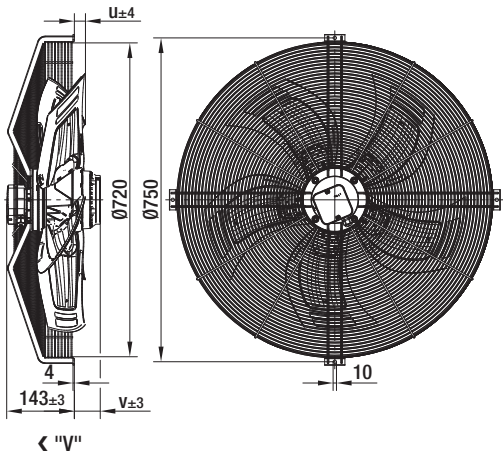
With full square nozzle

Type	Mass [kg]	f
W4D 630-GD01 -01	38,2	48,0
W4D 630-GH01 -01	34,2	23,0



With guard grille for short nozzle

Type	Mass [kg]	u	v
S4D 630-AD01 -01	28,5	87,0	134,0
S4D 630-AH01 -01	24,5	82,0	109,0



Internal diameter of the wall ring at least 634 mm

AC axial fans - HyBlade®

Ø 710



- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Encased in aluminium
- **Number of blades:** 5
- **Direction of rotation:** E F G counter-clockwise, A B C D clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharge holes:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Design with thermal overload protector

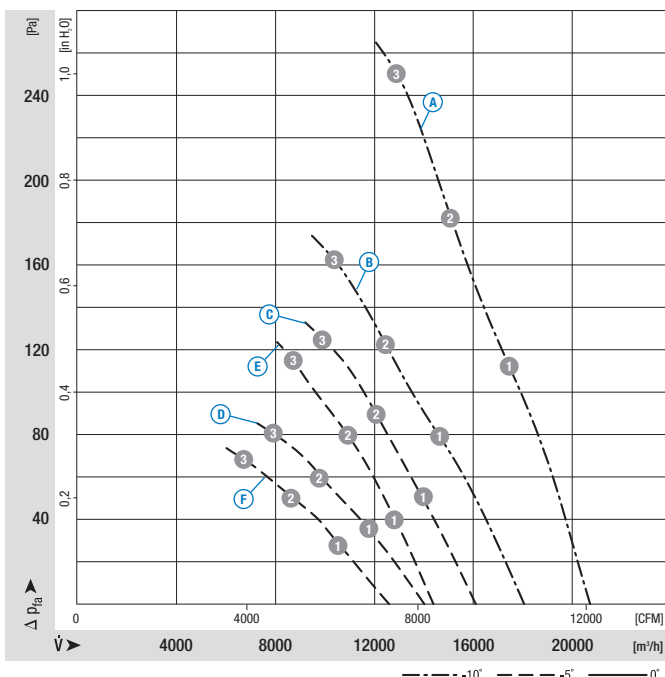
Nominal data

Type	Motor	Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
				VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*4D 710	M4D 138-LA	-10°	A	3~400 Δ	50	1350	2,38	4,50	—	250	-40..+60	F1b)/F2b)
			B	3~400 Y	50	1095	1,66	2,76	—	160	-40..+60	
*6D 710	M6D 138-HF	-5°	C	3~400 Δ	50	905	1,03	2,35	—	125	-40..+65	F1b)/F2b)
			D	3~400 Y	50	730	0,69	1,34	—	80	-40..+65	
*6D 710	M6D 110-IA	-5°	E	3~400 Δ	50	880	0,84	1,74	—	115	-40..+50	F1b)/F2b)
			F	3~400 Y	50	670	0,53	0,94	—	68	-40..+50	
*6E 710	M6E 110-IA	-10°	G	1~230	50	900	0,63	2,79	14,0/450	105	-40..+65	A2b)

subject to alterations

(1) Nominal data in operating point 3 with maximum load

Curves



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

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

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

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

For detailed information see page 36 ff.

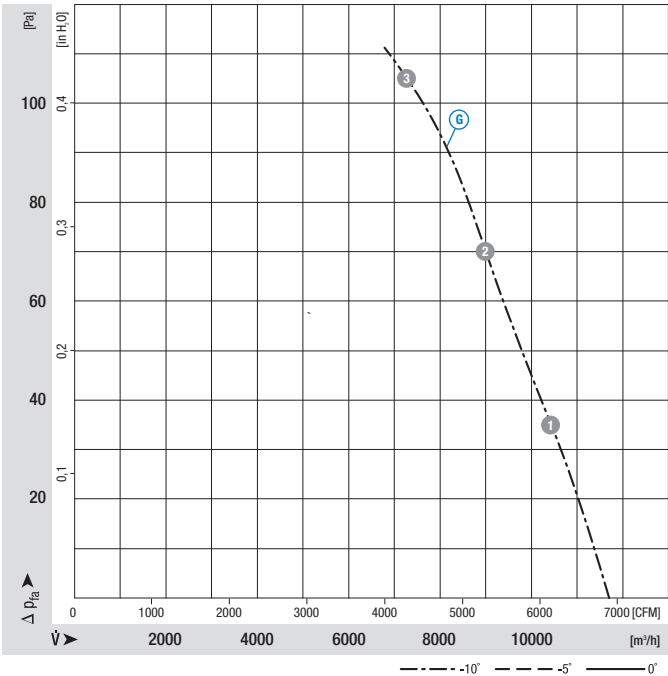
		n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
A	1	1380	2,00	3,92	81
A	2	1365	2,23	4,24	83
A	3	1350	2,38	4,50	86
B	1	1165	1,47	2,50	76
B	2	1125	1,59	2,71	78
B	3	1095	1,66	2,76	81
C	1	925	0,86	2,18	69
C	2	915	0,94	2,26	70
C	3	905	1,03	2,35	73
D	1	780	0,62	1,19	65
D	2	755	0,66	1,27	65
D	3	730	0,69	1,34	68
E	1	915	0,63	1,52	70
E	2	895	0,74	1,63	68
E	3	880	0,84	1,74	71
F	1	755	0,43	0,77	65
F	2	710	0,48	0,85	63
F	3	670	0,53	0,94	65

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow	 < "V"  < "V"  < "V"		
	Without attachments	With full square nozzle	With guard grille for short nozzle
"V"	A4D 710-AF01 -01	W4D 710-GF01 -01	S4D 710-AF01 -01
"V"	A6D 710-AH01 -01	W6D 710-GH01 -01	S6D 710-AH01 -01
"V"	A6D 710-AQ01 -01	W6D 710-GQ01 -01	S6D 710-AQ01 -01
"V"	A6E 710-AR03 -01	W6E 710-GR03 -01	S6E 710-AR03 -01

Direction of air flow "A" on request

Curves



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

Suction-side noise levels: Lw_A as per ISO 13347, Lp_A measured at 1 m distance to fan axis

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

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

For detailed information see page 36 ff.

	n	P ₁	I	Lw _A
	[rpm]	[kW]	[A]	[dB(A)]
③ ①	935	0,50	2,24	73
③ ②	920	0,56	2,51	73
③ ③	900	0,63	2,79	77

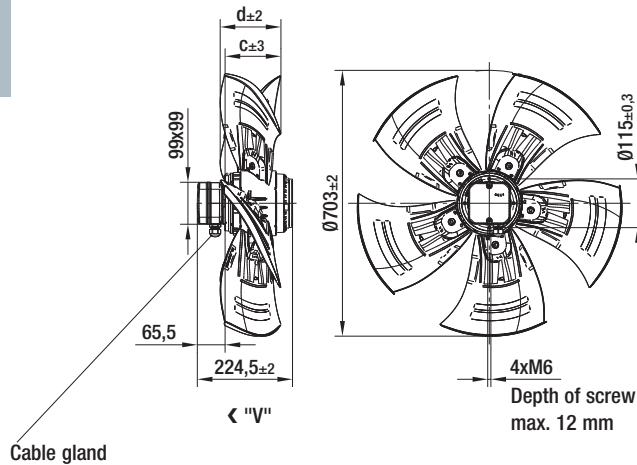
AC axial fans - HyBlade®

Ø 710 with motor M**110, drawings for direction of air flow "V"



Without attachments

Type	Mass [kg]	c	d
A6D 710-AQ01 -01	14,0	118,0	113,0
A6E 710-AR03 -01	14,0	111,0	96,0

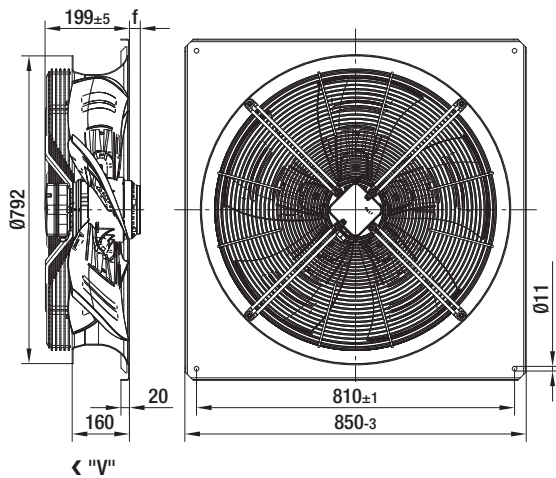


Internal diameter of the wall ring at least 710 mm



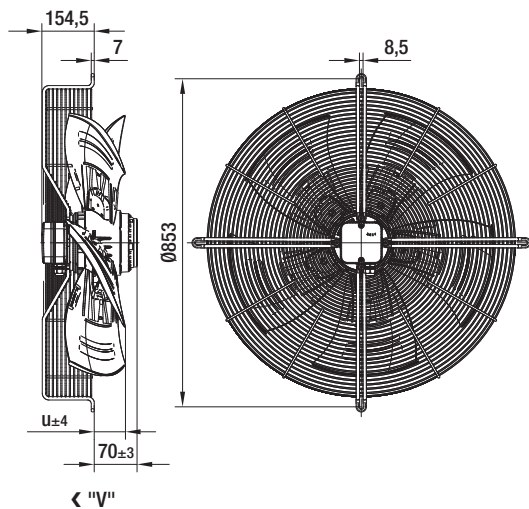
With full square nozzle

Type	Mass [kg]	f
W6D 710-GQ01 -01	29,9	25,5
W6E 710-GR03 -01	29,9	25,5



With guard grille for short nozzle

Type	Mass [kg]	u
S6D 710-AQ01 -01	20,5	29,0
S6E 710-AR03 -01	20,5	22,0



Internal diameter of the wall ring at least 710 mm

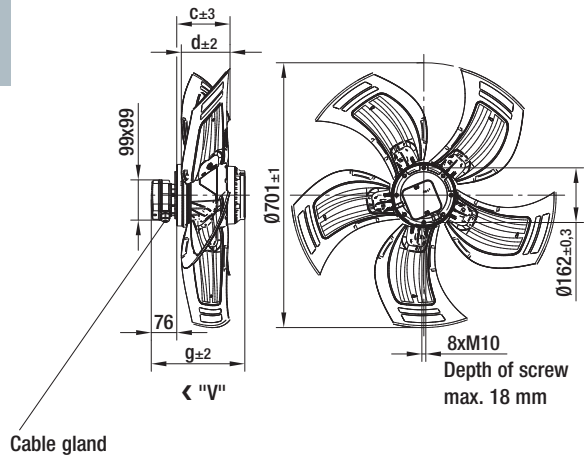
AC axial fans - HyBlade®

Ø 710 with motor M*D138, drawings for direction of air flow "V"



Without attachments

Type	Mass [kg]	c	d	g
A4D 710-AF01 -01	22,6	142,0	110,0	277,0
A6D 710-AH01 -01	18,8	148,0	126,0	252,0

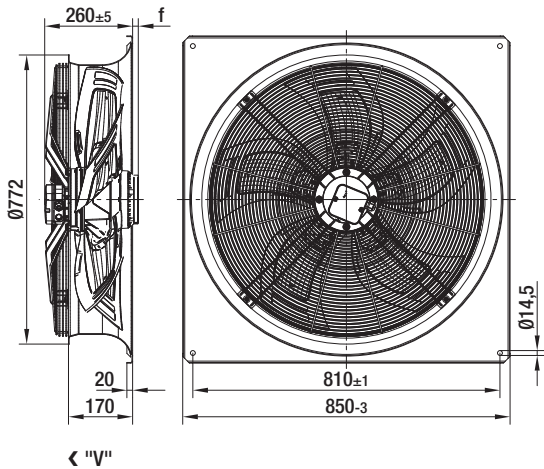


Internal diameter of the wall ring at least 710 mm



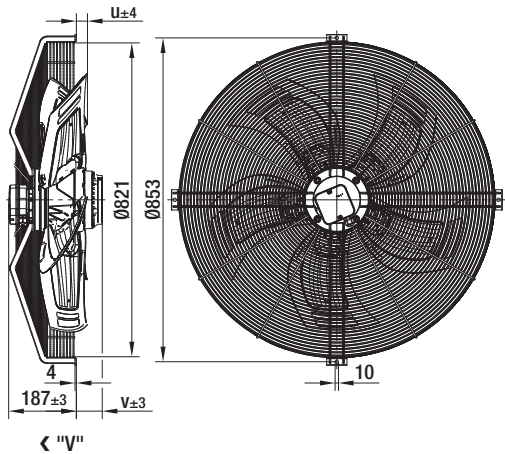
With full square nozzle

Type	Mass [kg]	f
W4D 710-GF01 -01	39,9	17,0
W6D 710-GH01 -01	36,7	---



With guard grille for short nozzle

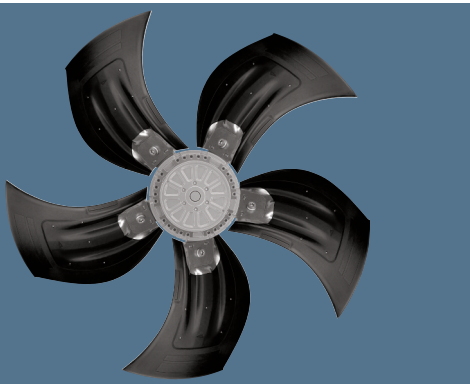
Type	Mass [kg]	u	v
S4D 710-AF01 -01	30,5	31,0	90,0
S6D 710-AH01 -01	26,6	37,0	65,0



Internal diameter of the wall ring at least 710 mm

AC axial fans - HyBlade®

Ø 800

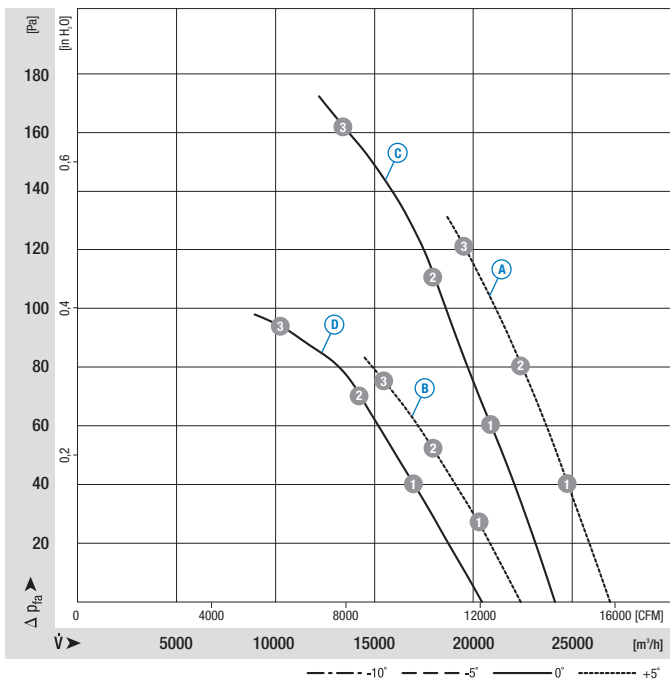


- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Encased in aluminium
- **Number of blades:** 5
- **Direction of rotation:**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

Nominal data		Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
Type	Motor			VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*6D 800	M6D 138-NA	+5°	Ⓐ	3~400 Δ	50	900	2,33	4,85	—	120	-40..+50	F1b)/F2b)
			Ⓑ	3~400 Y	50	700	1,59	2,87	—	75	-40..+50	
*6D 800	M6D 138-LA	0°	Ⓒ	3~400 Δ	50	880	1,94	3,90	—	160	-40..+60	F1b)/F2b)
			Ⓓ	3~400 Y	50	670	1,21	2,23	—	92	-40..+60	
*8D 800	M8D 138-LA	0°	Ⓔ	3~400 Δ	50	660	0,99	2,37	—	105	-40..+65	F1b)/F2b)
			Ⓕ	3~400 Y	50	485	0,58	1,21	—	54	-40..+65	
*ZD 800	MZD 138-HF	0°	Ⓖ	3~400 Δ	50	435	0,36	1,12	—	40	-40..+65	F1b)/F2b)
			Ⓗ	3~400 Y	50	340	0,20	0,47	—	23	-40..+65	

subject to alterations (1) Nominal data in operating point 3 with maximum load

Curves



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

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

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

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

For detailed information see page 36 ff.

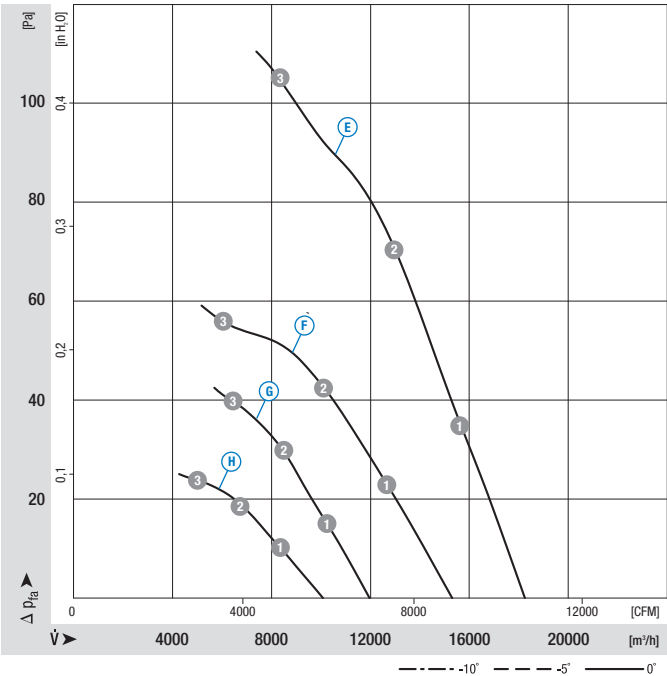
	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
Ⓐ 1	920	1,99	4,59	74
Ⓐ 2	910	2,10	4,69	74
Ⓐ 3	900	2,33	4,85	76
Ⓑ 1	750	1,39	2,58	69
Ⓑ 2	735	1,44	2,68	69
Ⓑ 3	700	1,59	2,87	70
Ⓒ 1	910	1,58	3,44	72
Ⓒ 2	900	1,72	3,60	73
Ⓒ 3	880	1,94	3,90	77
Ⓓ 1	740	1,08	1,98	66
Ⓓ 2	710	1,13	2,08	67
Ⓓ 3	670	1,21	2,23	70

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow	 < "V"  < "V"  < "V"		
	Without attachments	With full square nozzle	With guard grille for full nozzle
"V"	A6D 800-AU01 -01	W6D 800-GU01 -01	S6D 800-CU01 -01
"V"	A6D 800-AD01 -01	W6D 800-GD01 -01	S6D 800-CD01 -01
"V"	A8D 800-AD01 -01	W8D 800-GD01 -01	S8D 800-CD01 -01
"V"	AZD 800-AG03 -01	WZD 800-GG03 -01	SZD 800-CG03 -01

Direction of air flow "A" on request

Curves



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

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

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

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

For detailed information see page 36 ff.

		n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
Ⓔ	1	685	0,77	2,10	65
Ⓔ	2	675	0,85	2,20	66
Ⓔ	3	660	0,99	2,37	74
Ⓕ	1	555	0,51	1,07	60
Ⓕ	2	530	0,53	1,12	60
Ⓕ	3	485	0,58	1,21	66
Ⓖ	1	450	0,32	1,09	55
Ⓖ	2	445	0,34	1,10	55
Ⓖ	3	435	0,36	1,12	59
Ⓗ	1	365	0,18	0,43	51
Ⓗ	2	355	0,19	0,45	49
Ⓗ	3	340	0,20	0,47	52

AC axial fans - HyBlade®

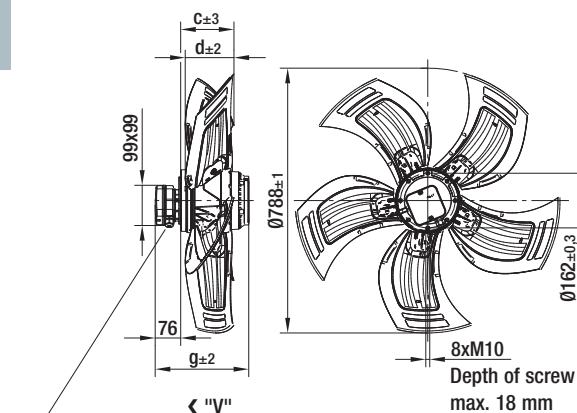
Ø 800 with motor M*D138, drawings for direction of air flow "V"



Without attachments

Type	Mass [kg]	c	d	g
A6D 800-AU01 -01	26,5	172,0	171,0	297,0
A6D 800-AD01 -01	23,0	159,0	149,0	277,0
A8D 800-AD01 -01	23,0	159,0	149,0	277,0
AZD 800-AG03 -01	19,0	159,0	149,0	252,0

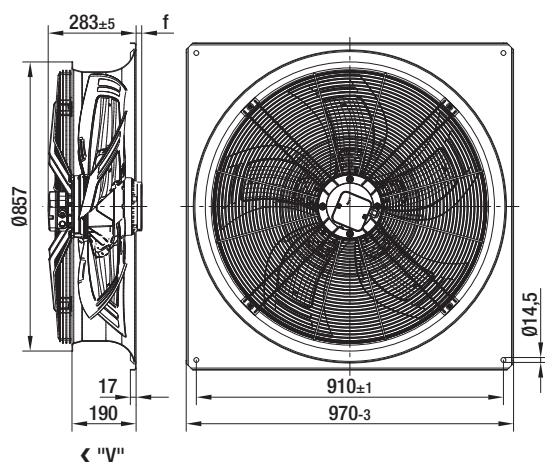
Internal diameter of the wall ring at least 795 mm



Cable gland

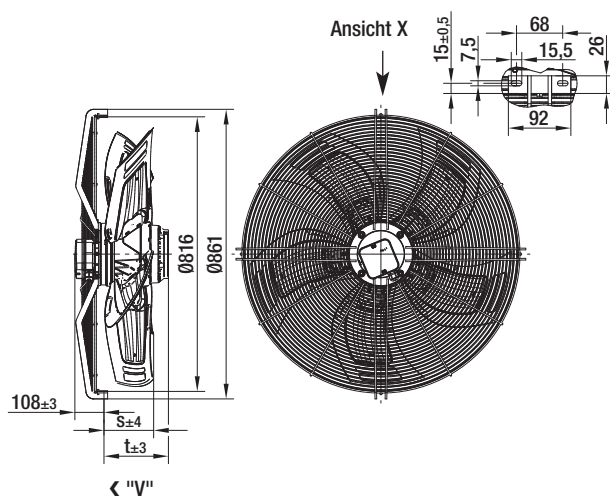
With full square nozzle

Type	Mass [kg]	f
W6D 800-GU01 -01	46,6	36,0
W6D 800-GD01 -01	44,2	---
W8D 800-GD01 -01	44,2	---
WZD 800-GG03 -01	40,2	---



With guard grille for full nozzle

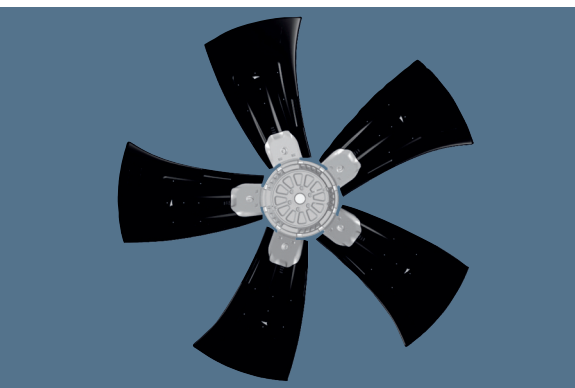
Type	Mass [kg]	s	t
S6D 800-CU01 -01	33,3	162,0	211,0
S6D 800-CD01 -01	30,1	127,0	169,0
S8D 800-CD01 -01	30,1	127,0	169,0
SZD 800-CG03 -01	26,2	127,0	144,0



Internal diameter of the wall ring at least 795 mm

AC axial fans - HyBlade®

Ø 910



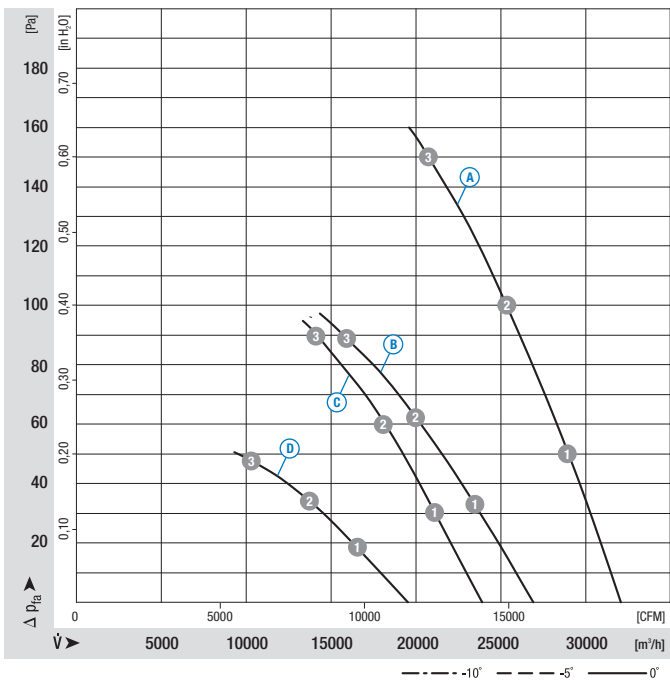
- **Material:** Guard grille: Steel, phosphated and coated in black plastic
Wall ring: Sheet steel, pre-galvanised and coated in black plastic
Blades: Insertion part made of sheet aluminium, extrusion-coated in PP plastics
Rotor: Encased in aluminium
- **Number of blades:** 5
- **Direction of rotation:**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

Nominal data		Blade angle	Curve	Nominal voltage	Frequency	Speed/rpm ⁽¹⁾	Max. power input ⁽¹⁾	Max. current draw ⁽¹⁾	Capacitor	Max. operative range	Perm. amb. temp.	Electr. connection
Type	Motor			VAC	Hz	rpm	kW	A	µF/VDB	Pa	°C	p. 34
*6D 910	M6D 138-NA	0°	(A)	3~400 Δ	50	885	2,48	5,15	—	150	-40..+50	F1b)/F2b)
			(B)	3~400 Y	50	685	1,57	2,90	—	90	-40..+50	
*8D 910	M8D 138-LA	0°	(C)	3~400 Δ	50	650	1,15	2,78	—	90	-40..+65	F1b)/F2b)
			(D)	3~400 Y	50	475	0,64	1,36	—	47	-40..+65	
*ZD 910	MZD 138-HF	0°	(E)	3~400 Δ	50	420	0,41	1,13	—	38	-40..+65	F1b)/F2b)
			(F)	3~400 Y	50	305	0,21	0,48	—	20	-40..+65	

subject to alterations

(1) Nominal data in operating point 3 with maximum load

Curves



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

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

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

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

For detailed information see page 36 ff.

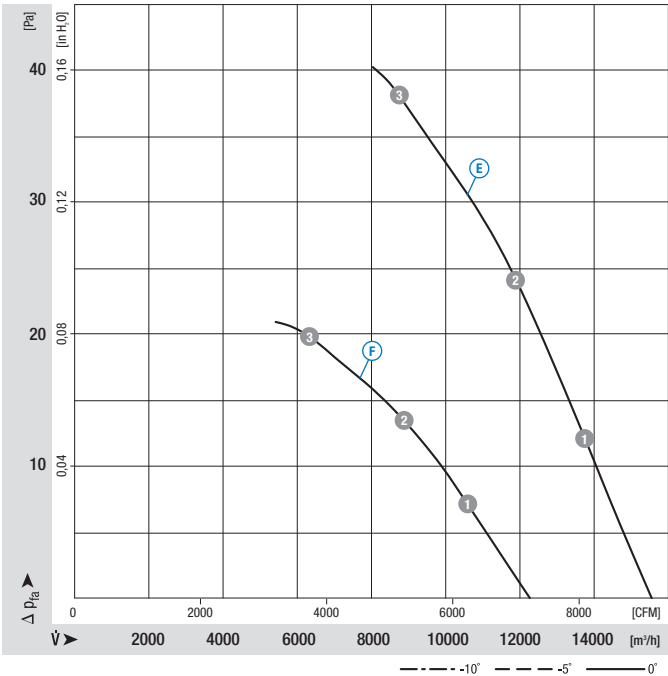
	n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
(A) 1	915	2,05	4,67	75
(A) 2	900	2,26	4,88	75
(A) 3	885	2,48	5,15	77
(B) 1	750	1,41	2,67	70
(B) 2	715	1,49	2,82	69
(B) 3	685	1,57	2,90	71
(C) 1	675	0,95	2,57	68
(C) 2	665	1,05	2,67	67
(C) 3	650	1,15	2,78	70
(D) 1	530	0,59	1,24	61
(D) 2	500	0,62	1,31	59
(D) 3	475	0,64	1,36	63

- **Cable exit:** Via terminal box
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE (acc. to EN 60034)

Direction of air flow	  		
	Without attachments	With full square nozzle	With guard grille for full nozzle
"V"	A6D 910-AA01 -01	W6D 910-GA01 -01	S6D 910-CA01 -01
"V"	A8D 910-AD03 -01	W8D 910-GD03 -01	S8D 910-CD03 -01
"V"	AZD 910-AG03 -01	WZD 910-GG03 -01	SZD 910-CG03 -01

Direction of air flow "A" on request

Curves



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

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

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

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

For detailed information see page 36 ff.

		n [rpm]	P ₁ [kW]	I [A]	L _{wA} [dB(A)]
Ⓔ	1	440	0,34	1,08	57
Ⓔ	2	430	0,37	1,10	56
Ⓔ	3	420	0,41	1,13	59
Ⓕ	1	340	0,19	0,44	51
Ⓕ	2	325	0,20	0,46	49
Ⓕ	3	305	0,21	0,48	50

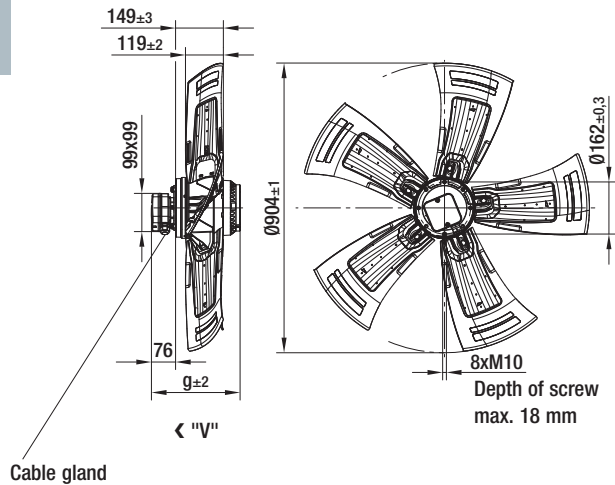
AC axial fans - HyBlade®

Ø 910 with motor M*D138, drawings for direction of air flow "V"



Without attachments

Type	Mass [kg]	g
A6D 910-AA01 -01	26,9	297,0
A8D 910-AD03 -01	23,7	277,0
AZD 910-AG03 -01	19,8	252,0

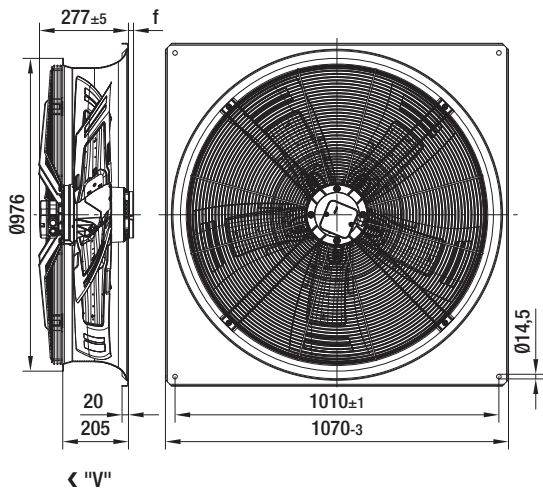


Internal diameter of the wall ring at least 913 mm



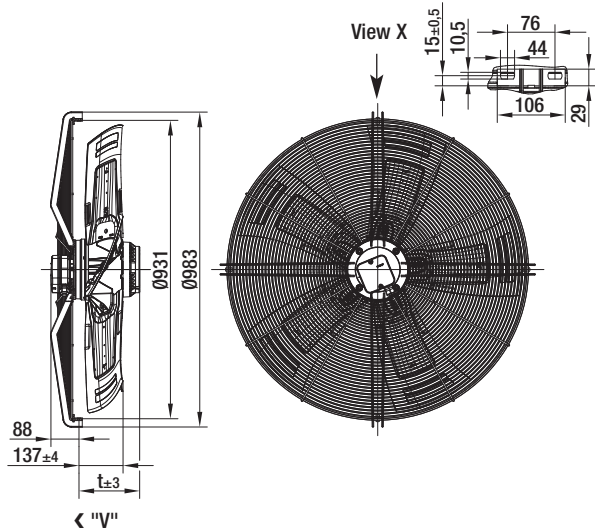
With full square nozzle

Type	Mass [kg]	f
W6D 910-GA01 -01	51,6	19,0
W8D 910-GD03 -01	48,4	---
WZD 910-GG03 -01	44,5	---



With guard grille for full nozzle

Type	Mass [kg]	t
S6D 910-CA01 -01	34,9	209,0
S8D 910-CD03 -01	31,6	189,0
SZD 910-CG03 -01	27,8	164,0

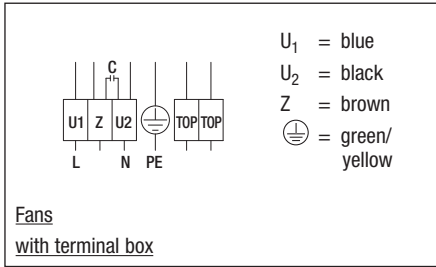


Internal diameter of the wall ring at least 913 mm

Electrical connections AC

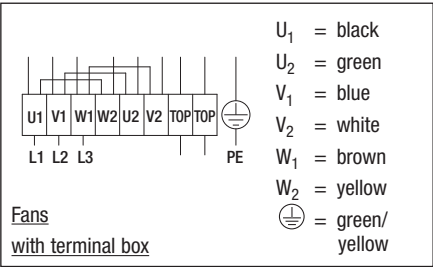
Fans (1 ~ 230 VAC power line)

A2b) Single-phase capacitor motor
with connection for external TOP

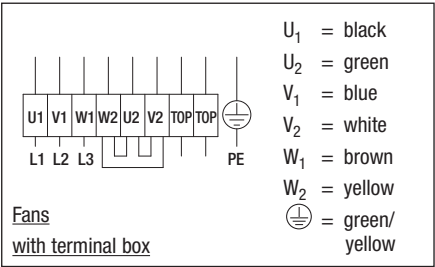


Fans, 2 speeds via Δ /Y-switch (3~ 400 VAC power line)

F1b) Delta connection (high speed)
with TOP

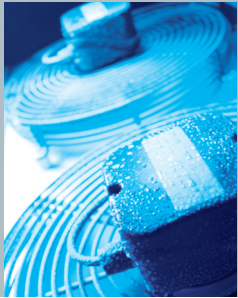


F2b) Star connection (low speed)
with TOP



Direction of rotation is reversed by swapping two line phases.

Technical parameters & scope



High standards for all ebm-papst products

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

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

General performance parameters

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

Type of protection

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

Insulation class

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

Mounting position

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

Condensate discharge holes

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

Mode of operation

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

Protection class

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

Service life

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

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

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

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

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

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

Motor protection / thermal protection

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

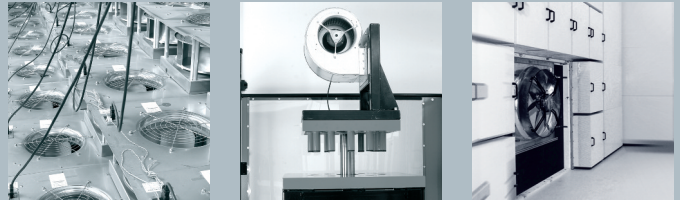
Depending on motor type and field of application, the following protective features are realised:

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

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

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

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



■ Mechanical strain / performance parameters

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

Vibration test

Vibration tests are carried out in compliance with

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

Shock load

Shock load tests are carried out in compliance with

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

Balancing quality

Testing the balancing quality is carried out in compliance with

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

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

■ Chemo-physical strain / performance parameters

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

■ Fields of application, industries and applications

Our products are used in various industries and applications:

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

■ Legal and normative directives

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

Standards

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

EMC

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

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

Leakage current

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

Measuring is according to IEC 60990.

Approvals

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

Most of our products can be supplied with the relevant approval.

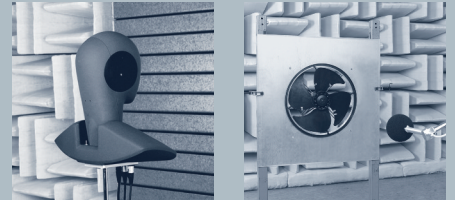
Information on existing approvals is provided in the product-specific data sheets.

■ Air performance measurements

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

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

Room for precision noise measuring



■ Measurement conditions for air and noise measurement

ebm-papst products are measured under the following conditions:

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

■ Noise measurements

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

Sound pressure level and sound level

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

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

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

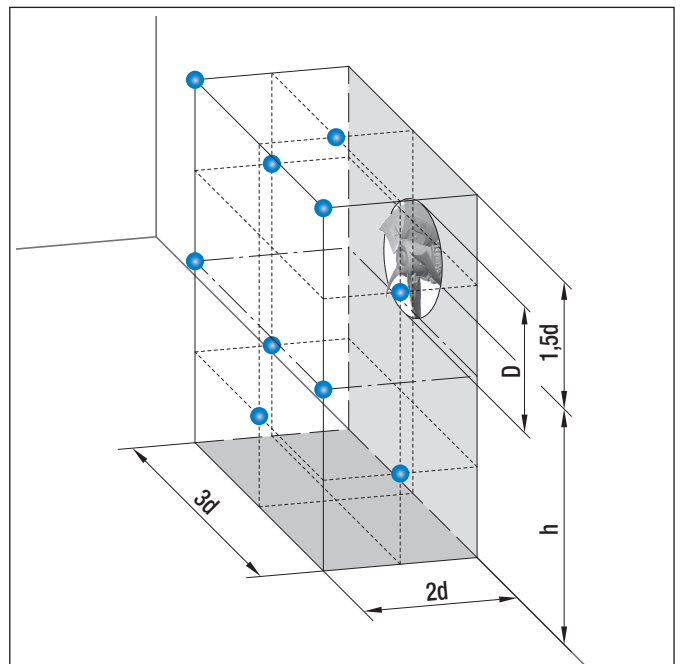
Measuring configuration as per ISO 13347-3 respectively DIN 45635-38:

- 10 measuring points

$$d \geq D$$

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

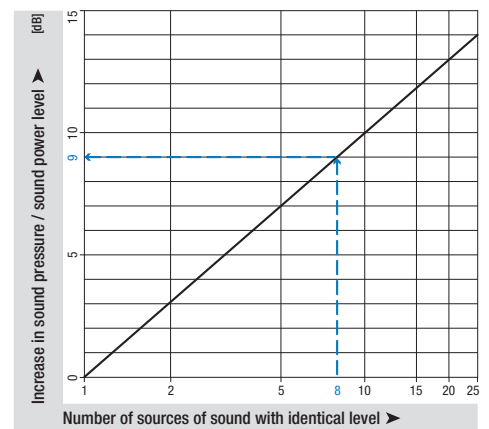
$$\text{Measurement area } S = 6d^2 + 7d(h + 1,5d)$$



Adding multiple noise sources with the same level

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

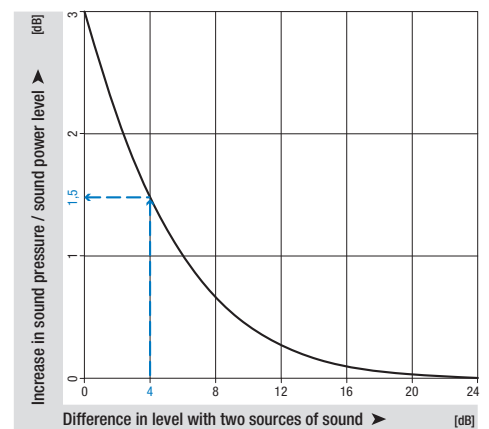
Example: 8 A3G800 axial fans are on a condenser. According to the data sheet, the sound pressure level of a fan is approximately 75 dB(A). The level increase measured from the diagram is 9 dB. Thus the overall sound level of the installation can be expected to be 84 dB(A).



Adding two noise sources with different levels

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

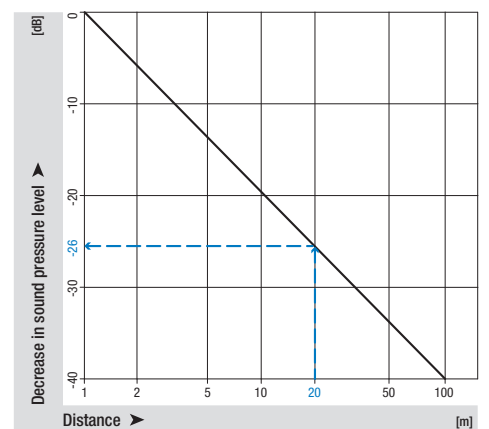
Example: There is an axial fan A3G800 with a sound pressure level of 75 dB(A) at the operating point and an axial fan A3G710 with 71 dB(A) in a ventilation unit. The level difference is 4 dB. The level increase can now be read in the diagram as approx. 1.5 dB. This means that the overall sound level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



Distance laws

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

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



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

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compact fan agent



motor specialist



motor agent

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Compact fans for AC, DC and EC

Version 2016-01

ebm**papst**

The engineer's choice



Trendsetter in fan technology

Uncompromising quality made by ebm-papst



Among the best.

Trendsetting with innovative technologies. Listening to customers' needs. Developing new ideas to meet requirements and realizing them with pioneering spirit. This philosophy has made ebm-papst the leading technology pioneer in the world of fans.

A brand in that decades of application expertise gained from large-volume fan production and because we are in a position to produce highly efficient quality products. Our intelligent solutions for electronics cooling make sure that you are always one step ahead of the competition thanks to innovative, reliable, top-quality technology. Of course they are readily available at fair market prices.

And if required, tailor-made right down to the last detail. In other words, if you need fans that do not yet actually exist, contact us.

Insist on ebm-papst.

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ebm-papst company profile

The entire world of ventilation and drive engineering. This is the world of ebm-papst. More than 12,000 people – in Germany and throughout the world – develop, produce and sell our motors and fans. Our global presence and unique range of products, based on a quality standard that surpasses all others, have made us the world market leader in motors and fans. Our daily work is determined by a keen awareness of our customer's needs and constant striving to arrive at the perfect application solution for a wide variety of different industries.

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 history – Our drive

Rooted in ebm, PAPST and mvl, the three leading innovators in the development and production of motors and fans, ebm-papst has established itself as the world market leader. Now as ever, our legendary inventive spirit shines through in products that set standards in many industries worldwide. We are proud to say that, despite difficult competition, our performance has always been exemplary and outstanding in business, in our personal relationship with our customers, and of course with respect to technology and engineering. For decades, we have contributed to the world of air technology and drive engineering with both small revolutions and large milestones. To maintain this advantage in skills and knowledge to reach maximum quality and thus the highest degree of customer satisfaction, our employees around the world put their passion and dedication to work for you.

Passionately involved in R&D

Our catalogs only show you the results of our constant work 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. We take advantage of the latest development methods and state-of-the-art technology, and invest 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 without any compromise. Whether produced in one of our six factories in Germany or one of our eleven international production sites, our products always have the same high level of quality. This quality control is something you can definitely rely on throughout all the stages of the process, from customer service, development, and material selection,

to the best certified suppliers, parts production, and final delivery.

Furthermore, our products have to pass the most rigorous tests under all realistic operating conditions: continuous stress test, salt spray test, vibration test, or 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. Our manufacturing philosophy is focused completely on environmental care in production, recycling, waste, and wastewater disposal.

Global Domestic

In order to be the world specialist for customized solutions, you need strong partners. Global Domestic – being present all over the world and being a national company in each individual country – is how we have established ourselves in all important markets on this globe with our successful subsidiaries. And so you will always find ebm-papst close to home, speaking your language, and knowing the demands of your markets. Besides, our worldwide production alliance serves as a basis for competitive pricing. Our global services and logistic services ensure short response times, IT networking, 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 received for our constant efforts to provide only the best quality products and services.

Sustainability is at the core of our thinking and action. As a matter of principle!

Environmental compatibility and sustainability have always been at the core of our thinking and action. Which is why we have been dedicated for decades to the simple but firm principle of one of our company founders, Gerhard Sturm: "Every new product we develop must be economically and ecologically superior to its predecessor." We use the name GreenTech to express our company philosophy.

GreenTech is proactive development.

Even in the design phase, the materials and processes we use are optimized for the greatest possible environmental sustainability, energy balance, and wherever possible, recyclability. We continually improve the material and performance of our products, as well as the flow and noise characteristics. At the same time, we reduce energy consumption significantly. Close cooperation with universities and scientific institutes and a professorship we sponsor in the field of power engineering and regenerative energies allow us to profit from the latest research findings in these disciplines while preparing highly qualified young academics for the future at the same time.

GreenTech is eco-friendly production.

GreenTech also stands for maximum energy efficiency in our production processes. Here, the intelligent use of industrial waste heat and groundwater cooling, photovoltaics, and of course, our own cooling and ventilation technology, play a very important role. For example, our most modern plant consumes 91% less energy than currently specified and required. This way our products contribute to protecting the environment, from their origin to their recyclable packaging.



GreenTech is acknowledged and certified.

Our entire production chain can stand up to critical scrutiny by environmental specialists and the public.

This supports our position as Germany's most sustainable company 2013, as does the DEKRA Award 2012 we received in the category "Umwelt Herausforderung Energiewende" (Environment Challenge: Transition to more sustainable energy systems), to name only a few of a large number of examples. The environmental advantage gained in the performance of the products developed from our GreenTech philosophy can also be measured in our compliance with the most stringent energy and environmental standards. In many instances, our products are already well below the thresholds energy legislation will impose a few years from now.

GreenTech is a good investment for our customers.

Innovative EC technology from ebm-papst is at the heart of GreenTech.

As the core element of our most efficient motors and fans, this technology allows efficiencies of up to 90%, saves energy at a very high level, extends the service life significantly, and makes our products maintenance-free. Not only do these values benefit the environment, but every cent also pays off for the user! All ebm-papst products, even those with applications that are not (yet) ready for GreenTech EC technology, have an attractive link between economy and ecology that holds great promise for the future.



GreenTech means
ecologically improving
every new product.

Expertise and technology

Drive know-how

For the past 60 years, all conceivable types and applications of drive engineering have played an essential role at ebm-papst. A commitment that is the foundation for the development of optimum drive solutions regardless of the type of fan and its use. DC and EC fans are generally equipped with electronically commutated external rotor motors. In order to save as much space as possible, commutation electronic components are integrated in the hub of the fan. Our AC fans are driven mainly by shaded-pole or capacitor motors based on the external rotor principle. In the 3900 and 9900 range of particularly slim fans, internal rotor motors are used.

Smooth operation

Our aerodynamically optimized design and high mechanical precision produces outstanding noise properties in series production. The "soft" commutation electronics of DC and EC fans produce a very smooth operation. By avoiding steep switching edges when the individual coils are switched, this reduces the structure-borne noise from the motor. Computer-aided measurements and series of analyses performed in a state-of-the-art sound measuring chamber are conducted on each fan

model from the very beginning.

Long service life

The bearing system plays a vital role both in the long service life and the smooth operation of device fans. The Sintec compact bearing provides most of the device fans with a proven bearing system. Constant low noise during the entire operating time and considerably lower shock sensitivity are the outstanding features of this bearing technology. In addition, with regard to temperature endurance, Sintec compact bearings can be used without problems in most applications.

Despite the slightly greater noise and shock sensitivity of ball bearings, this bearing technology should be given preference for fans exposed to extreme thermal and adverse application conditions (e.g. extreme environmental conditions, critical installation position, etc.). The service life data provided in this catalog is based on extensive service life tests and mathematically / scientifically proven service life calculations. Our product descriptions are updated continuously with all relevant data obtained from long-term tests.





Aerodynamics

With the aid of state-of-the-art computer programs, we are able to optimize the fan impellers and the inner shape of the housing. Air output and available motor performance are matched exactly to the size of fan. This guarantees the low noise that is typical for ebm-papst, even at high back pressure.

Sturdy construction – in metal or plastic

Fans of all-metal construction: sturdy and resistant. The housing is made of an aluminum alloy. The metal surfaces that are subject to corrosion are permanently protected by an impact- and abrasion-resistant electrophoretic baked enamel. This particular version is very recyclable. Fans with fiberglass-reinforced plastic housing and impeller: Excellent stability and low weight distinguish this highly efficient fan design. Combinations of metal housing and plastic impeller combine the advantages of both types of design.

Product images

The dimensioned drawings and product photos that appear in the catalog are for orientation purposes and may differ in some details from the actual product design.

Product liability

Motors and fans from ebm-papst are components intended for proper installation. The customer bears responsibility for the overall end product.

Safety is included



It goes without saying that all ebm-papst fans conform to the approval requirements of the VDE (Association of German Electrical Engineers) and the standards and regulations of UL and CSA. All fans conform to the European Standard EN 60335 or EN 60950 plus those of the UL (Underwriters Laboratories) and CSA (Canadian Standards Association). With few exceptions, our DC fans are designed to meet the requirements of protection class 3 / protection class voltage. AC fans for protection class 1. ebm-papst fans meet the highest requirements of electrical safety. All design variants feature reverse polarity and locked-rotor protection.

Quality in detail

It is the important details that reveal the meaning of the words "made by ebm-papst": Consistent adherence to development and design processes and a goal-oriented commitment to quality along the entire process chain are the foundation for the above-average service life of our fans. 100,000 hours and above are no longer an exception. The no-compromise ebm-papst quality assurance spans over all process levels – from the choice of materials and the use of carefully selected, certified suppliers, from the production of parts up to the final assembly. These details combine to result in reliable fan products with an above-average service life.

ErP Directive

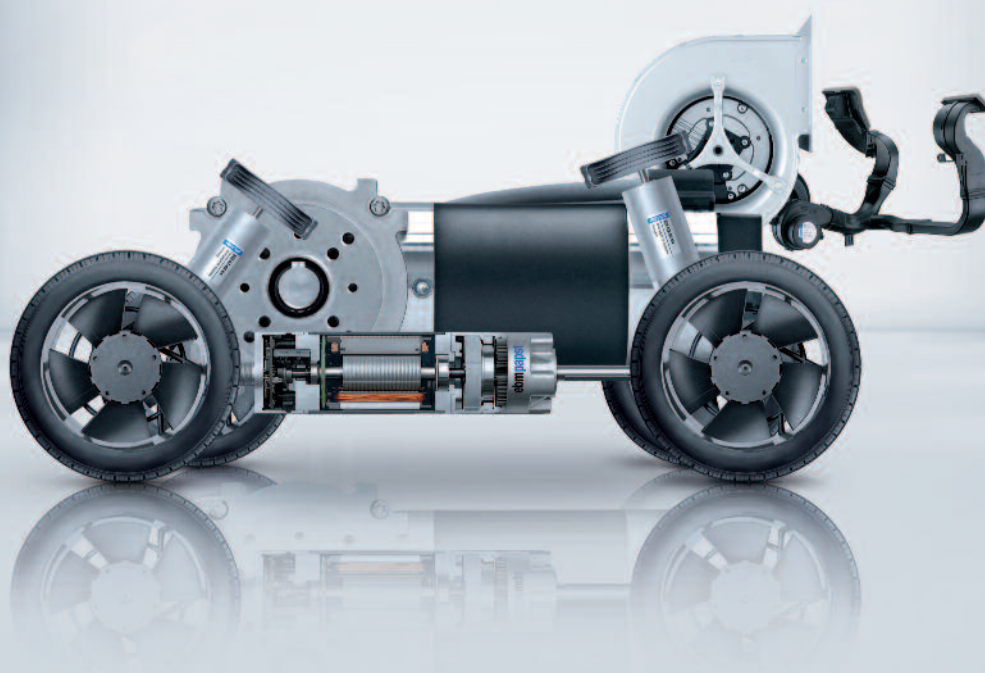


All products with power consumption between 125 W and 500 kW are subject to the European "Energy-related Products Directive" (ErP) for improving energy efficiency, with the first stage applicable from 2013 and the second as of 2015. Thanks to ground-breaking GreenTech EC technology, all of our fans and motors in these performance classes already exceed the ErP Directive today.

Tailor-made to meet your special requirements

Practical applications: fans that are customized and smart

ebm-papst has always developed customer-specific smart fans that meet the exact requirements of the application. We provide a wide range of standard fan types, in many sizes and designs; with smart motor features, monitoring and control functions, as well as special designs for use under extreme conditions. They are all based on the standard type fans that you will find in this catalog. Special fan types for your application can be produced in economical batch sizes. Our expert engineers will assist you in selecting the right configuration.



Innovation at its best:

Vario-Pro® with "intelligence inside". Its programmed intelligence thanks to customer-specifically configured software modules makes the cooling of electronics even more economical and flexible. For example, temperature-dependent speed profiles are possible with a number of freely selectable interpolation points. External speed settings and a variety of combinable alarm and tachometer functions can also be programmed. The digital motor management achieves high control accuracy.

Higher degree of protection for every type of application

ebm-papst provides, on request, many fan series in versions that meet to the requirements of degree of protection IP 54 and IP 68: Their stator and all electrical components are fully encapsulated. Stainless steel ball bearings can be used for operation in particularly aggressive media and use under extreme environmental conditions, thus providing additional reliability.

Almost anything is possible

Regardless of your cooling and ventilation tasks, we will develop the right solution. And the most economical one. Based on the fans listed in this catalog, more than 4000 different versions are available.

Temperature-controlled fans

Fans with temperature-controlled speed have particularly quiet cooling characteristics. Thanks to integrated IC technology, they adapt their speed to the current cooling requirements. The result is a drastic reduction of noise in most operating conditions. A temperature sensor provides the fan with thermal information: either externally via an exposed wire or integrated into the hub of the fan.

Speed setting via interfaces

With a wide range of DC fans with separate control input, ebm-papst provides an alternative to the NTC-controlled types of fans. They are especially suitable for systems and units that already have standard interfaces for varying speed via internal switching and control circuits.

The main applications are units that require load-dependent, individual speed profiles or systems with minimum standby cooling requirements and varied speed increase at varying power peaks.

Electronic tachometer

Do you want to be informed about the current fan speed at all times? ebm-papst has fans with an integrated "electronic tachometer". It registers the actual value of the fan speed. Via an integrated sensor, the fan generates speed-dependent signals that can be used directly. Depending on the number of poles of the motor, 2, 3, or 6 pulses per revolution are generated.

Alarm signal for greater safety

If your application requires monitored fan operation, in addition to speed monitoring, ebm-papst also provides a multitude of varying alarm signals. Depending on the type of fan in question, the signal will either be static, already evaluated, or interface-compatible. The alarm signal output provides reliable long-term monitoring and a status signal if critical operating conditions arise.

S-Force

The new standard!

When you need to provide extremely fast, powerful and efficient cooling for electronic components of all kinds, the generation of S-Force high-performance fans finishes first: in air performance, pressure increase, and technology. Extremely efficient drives and optimized aerodynamics form the core technology of the S-Force fans, which we offer in both an axial and brand-new centrifugal model.

S-Panther

S-Panther power delivered quietly. Wherever there is need for power and reduced noise, fans from the S-Panther range are the right solution. A strong pressure saddle curve at optimum air flow provides the power of a real big cat, an S-Panther.

Optional special versions

(see chapter DC fans - specials)

In the catalog, a text box in the upper right corner provides information on the special designs that are technically possible in the fan series.

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects and are usually not available off the shelf.

max. 44 m³/h	DC axial fans □ 60 x 25 mm
	- Material: Housing: GRP¹⁾ (PBT) Impeller: GRP¹⁾ (PA) - Direction of air flow: Exhaust over struts - Direction of rotation: Clockwise, seen on rotor - Connection: Via single wires AWG 22, TR 64 - Highlights: Developed for applications with demanding environmental requirements - Mass: 70 g
	- Possible special versions: (See chapter DC fans - specials) - Speed signal - Go- / NoGo-alarm - Alarm with limit speed - External temperature sensor - PWM control input - Analog control input - Humidity protection - Salt fog protection - Degree of protection: IP 54 / IP 68

Possible special designs are depicted on the catalog page.

Speed signal /2, /12

The fan uses a separate wire to output information about its speed, and thus about the speed of the rotor. For technical details, please refer to page 168 and the following.

Go- / NoGo alarm /37, /39

The fan uses a separate wire to output a static signal when it is stationary, thus providing information about whether or not the rotor is turning. For technical details, please refer to page 175 and the following.

Alarm with speed limit /17, /19

When one of the speeds defined in the fan electronics is undershot, the fan outputs a static signal providing information that the set speed limit was undershot. For technical details, please refer to page 172 and the following.

External temperature sensor

An NTC resistor (negative temperature coefficient) is attached to the fan via a separate wire and the fan changes its speed depending on the temperature on the NTC. For technical details, please refer to page 178.

Internal temperature sensor

In this case, the NTC is integrated into the fan and the fan changes its speed depending on the temperature at the NTC. For technical details, please refer to page 178.

PWM control input

The speed of the fan can be changed via a pulse-width-modulated signal. This signal is applied to a specially provided wire. For technical details, please refer to page 179.

Analog control input

The speed of the fan can be changed via a control voltage. This control voltage is applied to a specially provided wire. For technical details, please refer to page 179.

Multi-option control input

The fan has a control input that the user can trigger either using a PWM signal, an analog signal, or a resistor. For technical details, please refer to page 180.

Moisture protection

Protection for the fan electronics against moisture and condensation. For technical details, please refer to page 181.

Degree of protection IP 54* / IP 68*

Protection of motor and circuit board against splashed water and moisture. For technical details, please refer to page 181.

Salt spray protection

Protection of fan against the damaging effects of salt spray. For technical details, please refer to page 181.

Direction of rotation

On many variants, the direction of rotation can be changed via a control input.

* IP = International degree of protection marking

For AC fans max. IP 65 available.

Types of fans and their function



Axial fans:

High air flow with medium to relatively high pressure increase

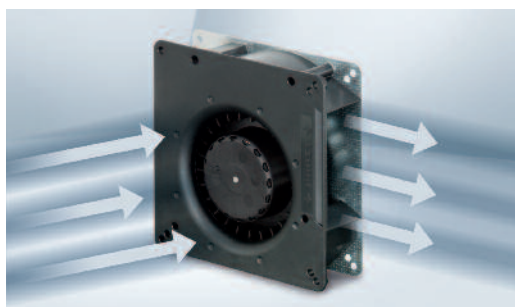
The air flow in axial fans with an impeller that is similar to a propeller is conducted largely parallel to the axis of rotation, in other words in the axial direction. Axial fans with free air delivery at zero static pressure have the lowest power input that rises with increasing back pressure. Axial fans for cooling of electronic equipment are mostly equipped with external housing. The electric motor is integrated in the fan hub. This compact design allows space-saving accommodation of all devices. The flange is equipped with mounting holes.



Diagonal fans:

High air flow at relatively high pressure increase

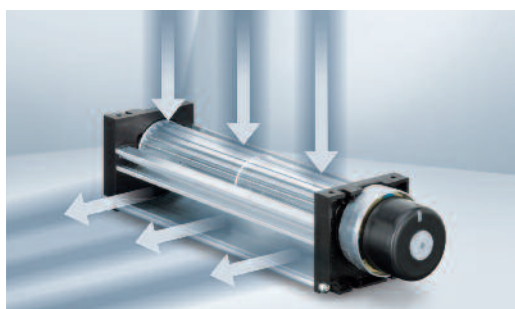
At first glance diagonal fans only differ slightly from axial fans. Intake is axial, whereas exhaust is diagonal. Due to the conical shape of the wheel and housing, the air is pressurized more in the diagonal fan. In direct comparison with axial fans of the same size and comparable performance, these fans are distinguished by the lower operating noise at high pressures.



Centrifugal fans:

High pressure increase at limited flow rate

Generally, many cooling tasks can be performed excellently by axial and/or diagonal fans. But if the cooling airflow has to be deflected at an angle of 90°, for example, or if even greater pressure increase is necessary, centrifugal fans are more effective. For your application, ebm-papst offers not only complete centrifugal fans, but also motor/impeller combinations without external housing.



Tangential fans:

High air flow with low pressure increase

Tangential fans are used especially to produce a wide airflow distribution through devices. The air flows through the roller-shaped impellers twice in the radial direction: in the intake area from the outside to the inside and in the outflow area from the inside to the outside. Whirls form in the roller due to the vanes, which guarantee a steady flow of air through the impeller.

Selecting the correct fan

1. Dissipated energy

A large amount of the energy consumed by electrical and electronic devices is converted to heat. So when selecting the correct fan, it is important to determine the dissipated energy that must be removed. The electrical power consumption of the unit to be cooled often represents a suitable value for this purpose.

2. Admissible temperature increase

The air flow that the selected fan is required to generate, is determined by the dissipated energy and the admissible heating (ΔT) of the cooling airflow (from entry to exit of the device to be cooled). The maximum admissible ΔT depends greatly on the temperature sensitivity of the individual parts of the device.

For example, $\Delta T = 5K$ means that the average cooling airflow leaving the device to be cooled may be only $5^\circ C$ warmer than the ambient temperature. This requires a lot of air. A lower air flow rate is sufficient if a higher temperature difference (e.g. $\Delta T = 20K$), can be tolerated.

3. Required cooling airflow

- In the diagram below, a horizontal line is drawn from the dissipated energy to intersect with the selected ΔT line.
- Read down from this point to obtain the required value for the cooling airflow. The diagram is based on the following formula:

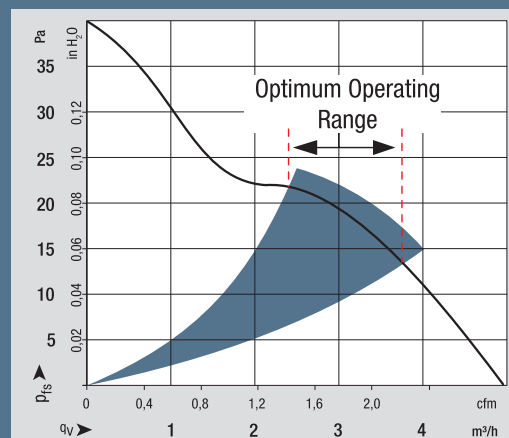
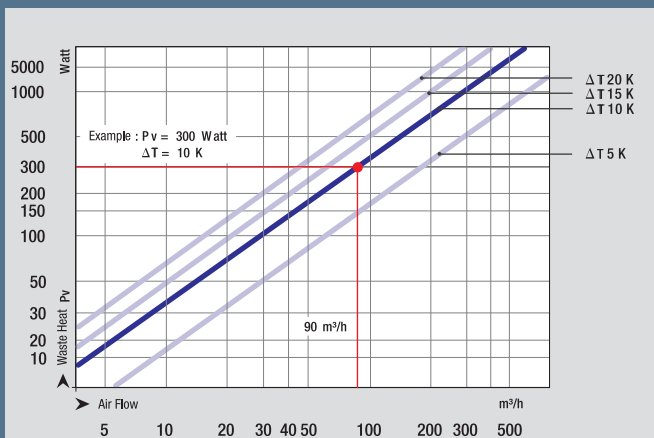
$$q_V = \frac{P_V}{C_{PL} \cdot \rho_L \cdot \Delta T}$$

4. Optimum operating range

But the fan you are looking for must also be able to deliver a suitable static pressure increase Δp_f , in order to force the cooling air through the device. So a fan must be selected that provides the required air flow performance within its optimum operating range (see also the air performance curves under technical data).

5. Fan selection

If more than one fan meets your requirements, the sound level, space requirements, economy, and ambient conditions will assist in making the final choice.



Definitions

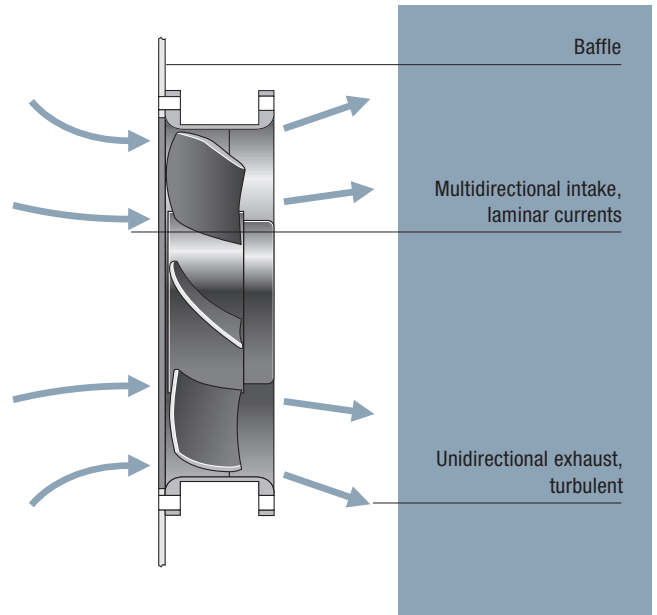
P_V = amount of heat to be dissipated in [W]
 C_{PL} = specific heat capacity of air in [J/kg/K]
 $C_{PL} = 1010 \text{ [J/kg/K]}$

ρ_L = air density in [kg/m³]
 $\rho_L = 1,2 \text{ kg/m}^3$
 $\Delta T = T_1 - T_2$ temperature difference in [K] between inlet and outlet

Fan installation

Intake or exhaust side installation

Under ideal conditions, the operating point is represented as the intersection between the fan and loss curves, regardless of whether the fan is positioned at the air intake or exhaust side of the device. In addition to ensuring the required flow rate, several other aspects must be considered for determining an appropriate fan concept. The intake air currents of a fan are mainly laminar, comprising nearly the entire suction area. By contrast, the exhaust air of a fan is generally turbulent and flows in a preferred direction, such as axial for an axial fan. The turbulence of the exhaust intensifies the heat transfer from components within the air currents, so that installing the fan on the air intake side of the device is recommended for cooling and heating. Installing the fan at the device intake is also advantageous because the fan will not be subjected to the dissipated heat of the device. Therefore, it operates at low ambient temperatures and has a greater life expectancy.



Information on installation

When a fan is operated for the first time in an application, the user may have noticed that the air flow in the device was lower than expected. What is the reason for this?

- The values stated in this catalog were determined under optimum, constant, and comparable measurement conditions.
- Ideal installation conditions under which free air intake and exhaust are present are seldom feasible in practice. Quite frequently, the fans have to be installed in close proximity to other components or cabinet panels. As a consequence, the intake and exhaust currents may be restricted, causing the air flow to diminish and the sound level to increase. Fans are particularly sensitive to obstructions that are positioned directly in front of the output cross section, and they often cause an increase in tonal noise.

Our advice: The distance between the fan and adjacent components should be at least equal to the installation depth of the fan.



Accident prevention



The turning rotor and the high speeds that are sometimes involved mean that our fan products carry an inherent risk of injury. They may only be operated after correct installation and with suitable protective equipment (e.g. with a finger guard). More information can be found in the Internet at: www.ebmpapst.com/safety

Connection instructions for S-Force fans



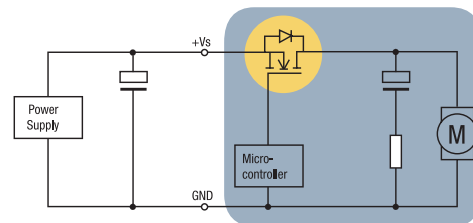
Special features of S-Force fans

The S-Force series is the most powerful product series. S-Force stands for the highest innovation in motor technology, fluid mechanics and electronics. The one-of-a-kind power density of the products requires special attention to the application at the customer's facility.

Service life

Due to the high currents in the fans, the load on the electrolyte capacitors is greater, which reduces the service life of the capacitor. As a larger or additional capacitor cannot be housed in the fan, the capacitor must be housed in the supply line.

If the power supply of the application has a corresponding capacitor, in some cases it may be possible to omit the external capacitor.



Recommended measure: additional external capacitor
(must be installed as close to the fan as possible < 30 cm).

Fan	Capacitor required
S-Force axial	
8200 / 3200 JH3-JH4	no
4100 NH3 / NH4 / NH5 / NH6	no
4100 NH7 / NH8	yes
5300 / 5300 TD	no
6300 / 6300 TD / DV 6300	no
2200 FTD	no
S-Force centrifugal	
RET 97 TD	yes
RER 120 TD	yes
RER 133 TD	no
RER 160 NTDHH / RG 160 NTDHH	yes
REF 175 TD	no
RER 175 TD	no
RER 190 TD / RG 190 TD	no
RER 220 TD / RG 220 TD	no
RER 225 TDM / RG 225 TDM	no
RER 225 TD / RG 225 TD	no

Recommended capacitors

We recommend using the following capacitors from Rubycon:

24 VDC:

50 ZL 680 μ F; 12.5 mm x 30 mm or

50 ZLH 680 μ F 12.5 mm x 30 mm

48 VDC:

100 YXG 470 μ F; 16 mm x 35.5 mm or

100 ZLH 470 μ F 16 mm x 31.5 mm

Other capacitors with equal or greater capacitance and equal or lower serial resistance can also be used.

ebm-papst St. Georgen has the following capacitors in stock:

24 VDC: 1000 μ F / 50 V, 16 mm x 25 mm

Art. no.: 992 0354 000 (LZ 354)

48 VDC: 680 μ F / 100 V, 18 mm x 40 mm

Art. no.: 992 0355 000 (LZ 355)

Service life

Service life data from ebm-papst St. Georgen

Our fans catalog gives three different values for the service life of each product. The first column usually states the service life L_{10} at 40 °C. the second column usually states the service life L_{10} at T_{max} . Exceptions are marked in the column headings. The third column states the new value, life expectancy L_{10IPC} (40 °C).

Sound power level	Silencers sleeve bearings	Ball bearings	Input power	Nominal speed	Temperature range	Service life L_{10} (40 °C)	Service life L_{10} (T_{max})	Life expectancy L_{10IPC} (40 °C) (see page 1)	Curve
Bel(A)	Watts	rpm	°C	Hours	Hours	Hours	Hours	Hours	
5,2	1,8	5 900	-20...+70	85 000 / 42 500	142 500	①			
5,4	1,5	6 300	-20...+70	85 000 / 42 500	142 500	②			

Example of the service life figures on the catalog page.

Service life L_{10} (40 °C) and L_{10} (T_{max})

The values given in the first two columns have been derived from intensive, in-house service life endurance tests in which our products are operated in various positions at 40 °C and 70 °C until they fail. A fan is deemed to have failed when it deviates from its defined air flow and speed values, or when the operating noise becomes noticeable. Such tests can take several years before a representative number of failures has been registered, and even today, some fans are still in the process of endurance testing, even though the test began early in the 1980s. These fans are proof of the legendary "made by ebm-papst" reliability. Test results are presented in a diagram and the service life of the product L_{10} at the temperature tested is determined based on the Weibull distribution.

These tests have given us years of experience in the way various design parameters and temperatures can affect the service life of a product. Data for service life at various temperatures for new products can be stated with a very high degree of precision based on tests, product specifications, and commonalities in the design of the product.

Life expectancy L_{10IPC} (40 °C)

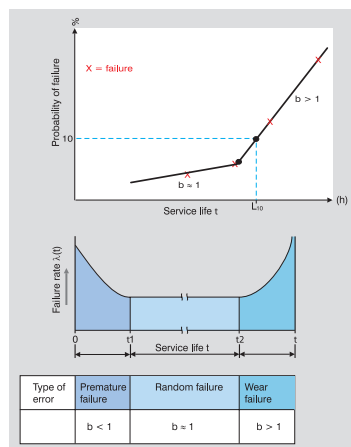
The new third service life column states the life expectancy L_{10IPC} . This information is based on the international standard IPC 9591. Again here, the foundations for the service life values are our service life endurance tests at high ambient temperatures. The service life at temperatures below the test temperatures is calculated using fixed factors. This method produces much higher service life values, especially at room temperature (see diagram on right).

Summary:

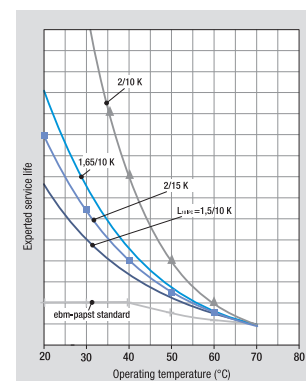
The life span calculations have been carried out to the best of our knowledge and are based on experience gained by ebm-papst. The specified L_{10} (40 °C), L_{10} (T_{max}) and L_{10IPC} (40 °C) values all allow statements to be made about the theoretical calculated service life under certain assumptions. The values determined here are extrapolations from our own service life tests and from statistical variables. In the respective customer applications, there may be different influencing factors that cannot be included in the calculations due to their complexity. The service life information is explicitly not a guarantee of service life, but strictly a theoretical quality figure.



Fans in an endurance test cabinet at ebm-papst St. Georgen. 1500 fans are operated in temperature cabinets until they fail.



Bathtub curve and Weibull distribution.



Example of the influence of factors from various manufacturers on the life expectancy.

Definitions

Nominal voltage [volts]

The voltage at which the nominal values (the table values listed in this catalog) were determined. The fan operation for DC fans is not limited to the nominal voltage. Fan speed and fan performance can vary according to the admissible voltage range that is specified on the nameplate of each fan. Please note that this is not a pulsed or modulated DC voltage.

Frequency [Hz]

ebm-papst AC fans are made for operating frequencies of 50 Hz or 60 Hz. Their technical data changes accordingly.

Air flow [m³/h, cfm]

The air performance of the fan in free air operation, i.e. the fan blows into the free space without static pressure increase.

Fan curves

The fan curves are determined in accordance with DIN ISO 5801 specifications on a dual-chamber test stand with intake side measurement. This measurement technique closely approximates the operating conditions experienced in typical applications for fans and yields realistic performance curves. The curves apply to an air density of $\rho = 1.2 \text{ kg/m}^3$ corresponding to an air pressure of 1013 mbar at 20 °C. Variations in air density affect pressure

generation, but not the flow rate. The pressure generated at other air densities can be estimated with the formula $\Delta p_2 = \Delta p_1 (\rho_2 / \rho_1)$.

The nominal speed values, air flow and power consumption listed in the table were measured in free air operation with horizontal shaft at an ambient temperature of 20 +5 °C, air density $\rho = 1.2 \text{ kg/m}^3$ after a warmup period of 5 min.

Optimum operating range

The optimum operating range is always indicated in the colored area in the air performance diagrams. In this range the fans operate best with respect to efficiency and sound level. Within this optimum operating range the sound level only fluctuates slightly.

Noise [dB(A), Bel(A)]

1. Sound pressure level – dB(A)

Noise ratings of the fan in free air operation, i.e. at maximum flow rate.

2. Sound power level 1 Bel(A) = 10 dB(A)

Extent of the overall sound radiation of the fan. The sound power level is determined in the optimum operating range.

PAPST Sintec® sleeve bearings

A particularly economical bearing system with excellent advantages:

- Very precise, large sintered bearings
- Low running noise
- High service life expectancy
- Resistant to shock and vibration

Ball bearings

Precision ball bearings for particularly high ambient temperatures and high service life expectancy.

Power consumption [watts]

Input performance of the fan motor when operating free blowing at nominal voltage. Depending on the operating condition in the application, the power consumption may be higher.

Temperature range [°C]

The admissible ambient temperature range within which the fan can be expected to run continuously.

Service life [h]

Service life L₁₀ at 40 °C and T_{max}

Standard figures for service life at ebm-papst. These two temperatures are based on intensive, in-house endurance tests and on experience from more than 60 years developing fans.

Life expectancy L_{10IPC} (40 °C)

Information calculated in line with the standard IPC 9591. Data based on the internal life expectancy at 70 °C, more optimistically extrapolated to 40 °C.

We expressly state that none of the information or data in this catalog is to be construed as a guarantee or warranty of properties.

Unit conversion

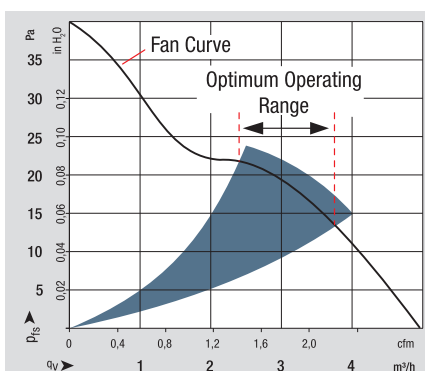
Air flow	Pressure
1 cfm = 1.7 m³/h	1 Pa = 1x10 ⁻⁵ bar
1 l/s = 3.6 m³/h	1 inch H ₂ O = 249 Pa
1 l/min = 0.06 m³/h	1 mm H ₂ O = 9.81 Pa

Subject to technical changes.

We do not support aerospace applications with our products. German and international patents (registered designs and utility models).

ebm-papst is a registered trademark of ebm-papst Mulfingen GmbH & Co. KG.

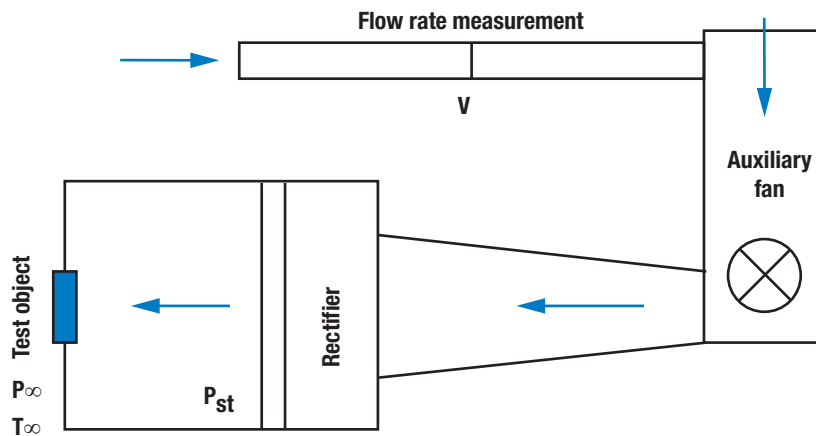
PAPST, SINTEC, VARIOFAN and Vario-Pro are registered trademarks of ebm-papst St. Georgen GmbH & Co. KG.



Standard test equipment to determine the fan characteristics

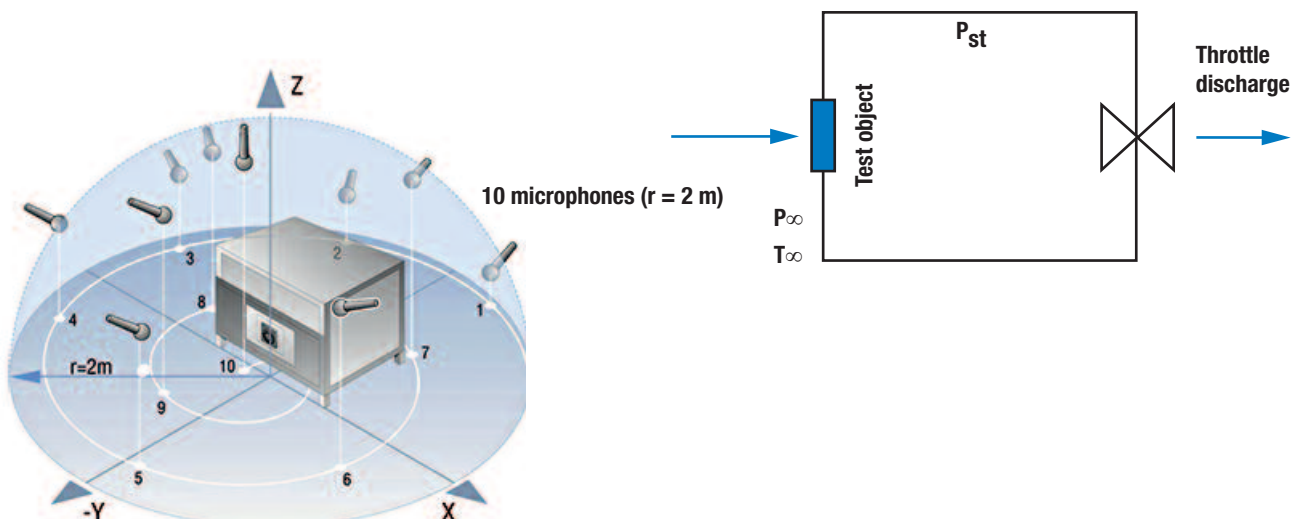
Pressure/air flow

Blow-down test facility acc. to ISO 5801



Sound power level pressure/air flow:

Outlet side regulated test rig in semi-anechoic chamber according to ISO 10302



Type code

3-digit DC axial fan e.g. 412 FM

Housing dimensions (W x H x D)		
Value	Edge dim. (W x H)	Installation depth (D)
2	25 x 25 mm	8 mm
4	40 x 40 mm	10 / 20 / 25 / 28 mm
5	50 x 50 mm	15 mm
6	60 x 60 mm	15 / 25 / 32 mm
7	70 x 70 mm	15 mm

Operating voltage	
Value	Nominal voltage
2	12 V
4	24 V
5	5 V
8	48 V

4 1 2 F M

Motor and housing version	
Value	Version
1	4xx fan, 10 / 20 / 25 / 28 mm (D)
1	6xx fan, 15 / 25 / 32 mm (D)
2	25 / 28 mm (D)
3	63x fan, 25 mm (D)
5	2xx fan, 8 mm (D)

Options (various versions possible)	
A	Analog speed control input (input voltage: 0...5 / 0...10 V DC)
D	Reinforced flange corners with through-holes (series 44xx F) Constant speed control regardless of operating voltage
E	Economy fan with round flange
F	Flat construction / frequency-modulated signal
G	Sleeve bearing
H	High speed
HH	Further increased speed
H3-H8	Additional further increased speeds (H8 - maximum fan speed)
I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
J	Jet characteristic / rigid curve
L	Low speed
M	Medium speed
ML	Between low and medium speed
N	Standard or basic speed (only DC fans)
O	Multi-option speed control input (analog or PWM signal)
P	PWM speed control input (pulse-width modulated signal)
R	Moisture protection coating
S	Circuit board and winding (IP 20), optional stainless steel ball bearing
T	Speed signal (additional wires for hall signal, obsolete technology)
TD	External temperature sensor (NTC behavior, i.e. thermistor)
U	Turbo drive (extremely powerful 3-phase motor)
V / VP	Environmentally friendly fan (min. IP 54)
W	VARIOFAN
X	Additional wires (standard length 310 mm)
-xxx	Mounting bore hole 3.7 mm
-xxx	Variant number

4-digit DC axial fan, e.g. 4312 GM

Housing dimensions (W x H x D)		
Value	Edge dimensions (W x H)	Installation depth (D)
2	Ø 220 x 200 mm	51 mm
3	92 x 92 mm	25 / 32 / 38 mm
4	119 x 119 mm	25 / 32 / 38 mm
5	127 x 127 mm	38 mm
5	135 x 135 mm	38 mm
5	140 x 140 mm	51 mm
6	Ø 172 mm	51 mm
6	Ø 172 x 150 / 160 mm	51 mm
7	Ø 150 mm	38 / 55 mm
8	80 x 80 mm	25 / 32 / 38 mm

Connection type and direction of rotation		
Value	Connection type	Direction of rotation
1	Wires, length = 310 mm	
5	Wires, length = 310 mm	
6	Plug, 2.8 x 0.8 mm	Counterclockwise (CCW)
7	Plug, 2.8 x 0.8 mm	Clockwise (CW)
8	Plug, 2.8 x 0.5 mm	Counterclockwise (CCW)
9	Plug, 2.8 x 0.5 mm	Clockwise (CW)

4 3 1 2 G M

Motor and housing version	
Value	Version
1	38 mm (D)
2	38 mm (D)
3	32 mm (D)
4	25 / 38 / 51 mm (D)

Operating voltage	
Value	Nominal voltage
2	12 V
4	24 V
6	36 V
8	48 V

Options (various versions possible)	
A	Analog speed control input (input voltage: 0...5 / 0...10 V DC)
D	Reinforced flange corners with through-holes (series 44xx F) Constant speed control regardless of operating voltage
DV	Diagonal Venturi fan
E	Economy fan with round flange
F	Flat construction / frequency-modulated signal
G	Sleeve bearing
H	High speed
HH	Further increased speed
H3-H8	Additional further increased speeds (H8 - maximum fan speed)
I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
J	Jet characteristic / rigid curve
L	Low speed
M	Medium speed
ML	Between low and medium speed
N	Standard or basic speed (only DC fans)
O	Multi-option speed control input (analog or PWM signal)
P	PWM speed control input (pulse-width modulated signal)
R	Moisture protection coating
S	Circuit board and winding (IP 20), optional stainless steel ball bearing
T	Speed signal (additional wires for hall signal, obsolete technology)
TD	External temperature sensor (NTC behavior, i.e. thermistor)
TD	Turbo drive (extremely powerful 3-phase motor)
U	Environmentally friendly fan (min. IP 54)
V / VP	VARIOFAN
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number

All measurements are given in mm.

Type code

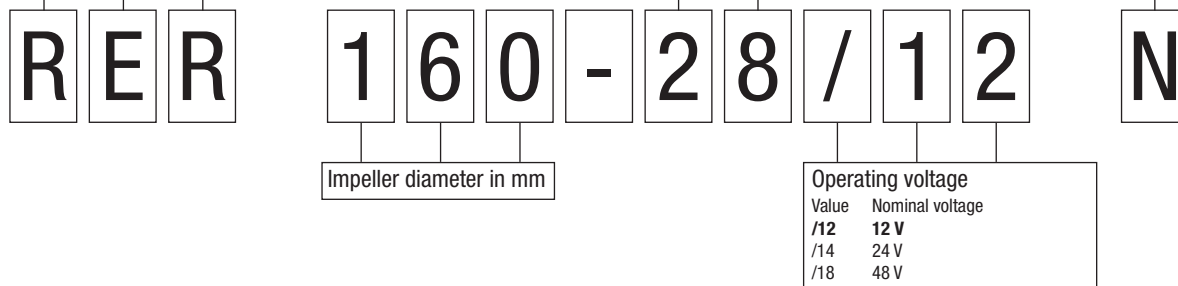
DC centrifugal fan e.g. RER 160-28/12 N

Type	Housing and fan impeller versions	
	Housing	Impeller blade design
RE	None	Non-curved, no direction of rotation set
REF	None	Forward/backward-curved impeller blades, flat
RER	None	Backward-curved impeller blades
RET	None	Forward-curved impeller blades
RG	Square	Forward/backward-curved impeller blades
RL	Round	Forward-curved impeller blades
RLF	Round	Forward/backward-curved impeller blades, flat
RV	Round	Forward-curved impeller blades

Fan impeller blade height

Options (various versions possible)

A	Analog speed control input (input voltage: 0...5 / 0...10 V DC)
D	Reinforced flange corners with through-holes (series 44xx F) Constant speed control regardless of operating voltage
E	Economy fan with round flange
F	Flat construction / frequency-modulated signal
G	Sleeve bearing
H	High speed
HH	Further increased speed
H3-H8	Additional further increased speeds (H8 - maximum fan speed)
I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
J	Jet characteristic / rigid curve
L	Low speed
M	Medium speed
ML	Between low and medium speed
N	Standard or basic speed (only DC fans)
O	Multi-option speed control input (analog or PWM signal)
P	PWM speed control input (pulse-width modulated signal)
R	Moisture protection coating Circuit board and winding (IP 20), optional stainless steel ball bearing
S	Speed signal (additional wires for hall signal, obsolete technology)
T	External temperature sensor (NTC behavior, i.e. thermistor)
TD	Turbo drive (extremely powerful 3-phase motor)
U	Environmentally friendly fan (min. IP 54)
V / VP	VARIOFAN
W	Additional wires (standard length 310 mm)
X	Mounting bore hole 3.7 mm
-xxx	Variant number

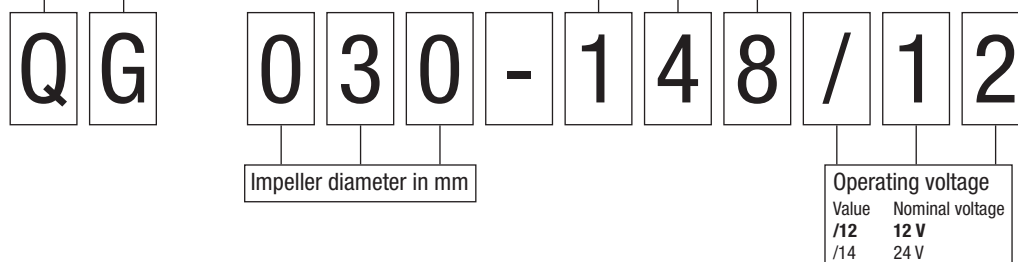


Crossflow blower e.g. QG 030-148/12

Type	Housing and fan impeller versions	
	Housing	Impeller blade design
QG	Round	Compressor drum

Housing dimensions (W x H)

Value	Edge dim. (W x H)	Impeller length	Total length
148	48 x 50 mm	148 mm	201 mm
198	48 x 50 mm	198 mm	258 mm
303	48 x 50 mm	303 mm	363 mm
353	48 x 50 mm	353 mm	413 mm



All measurements are given in mm.

Type code

4-digit GreenTech EC tubeaxial fans axial fan e.g. ACi 4420 HH

Housing dimensions (W x H x D)			Operating voltage				Options (various versions possible)	
Value	Edge dim. (W x H)	Installation depth (D)	Value	Nominal voltage	Frequency	Version		
1	Ø 98.5 mm	130 mm	0	115 / 230 V	50 / 60 Hz	Wide voltage range input (85-265 V AC)	A	Analog speed control input (input voltage: 0...5 / 0...10 V DC)
3	92 x 92 mm	38 mm	1	115 V	50 Hz		D	Reinforced flange corners with through-holes (series 44xx F)
4	119 x 119 mm	25 / 32 / 38 mm	2	230 V	50 Hz		E	Constant speed control regardless of operating voltage
6	Ø 172	51 mm					F	Economy fan with round flange
8	80 x 80 mm	32 mm					G	Flat construction / frequency-modulated signal
							H	Sleeve bearing
							HH	High speed
							HH	Further increased speed
							H3-H8	Additional further increased speeds (H8 - maximum fan speed)
							I	Integrated temperature sensor (NTC behavior, i.e. thermistor)
							J	Jet characteristic / rigid curve
							L	Low speed
							M	Medium speed
							ML	Between low and medium speed
							N	Standard or basic speed (only DC fans)
							O	Multi-option speed control input (analog or PWM signal)
							P	PWM speed control input (pulse-width modulated signal)
							R	Moisture protection coating
							S	Circuit board and winding (IP 20), optional stainless steel ball bearing
							T	Speed signal (additional wires for hall signal, obsolete technology)
							TD	External temperature sensor (NTC behavior, i.e. thermistor)
							U	Turbo drive (extremely powerful 3-phase motor)
							V / VP	Environmentally friendly fan (min. IP 54)
							W	VARIOFAN
							X	Additional wires (standard length 310 mm)
							-xxx	Mounting bore hole 3.7 mm
								Variant number

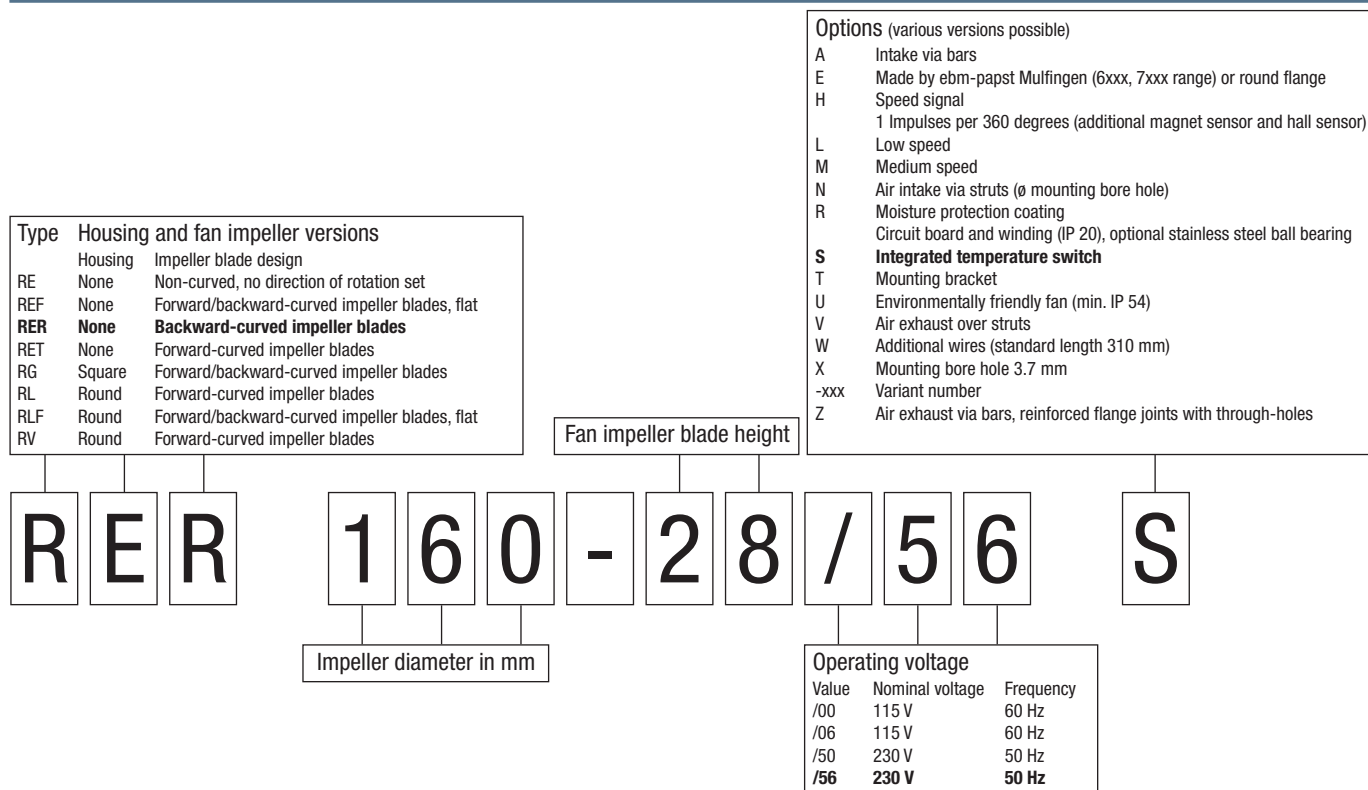
AC axial fan e.g. 3950 L

Housing dimensions (W x H x D)			Operating voltage			Options (various versions possible)	
Value	Edge dim. (W x H)	Installat. depth (D)	Value	Nominal voltage	Frequency		
3	92 x 92 mm	25 / 38 mm	0	115 V	60 Hz	A	Intake via bars
4	119 x 119 mm	25 / 32 / 38 mm	2	115 V	60 Hz	E	Made by ebm-papst Mulfingen (6xxx, 7xxx range) or round flange
5	127 x 127 mm	38 mm	3	115 V	60 Hz	H	Speed signal
5	135 x 135 mm	38 mm	4	115 V	50 Hz		1 Impulses per 360 degrees (additional magnet sensor and hall sensor)
5	140 x 140 mm	51 mm	5	230 V	50 Hz	L	Low speed
6	Ø 172 mm	51 / 52 mm	6	115 V / 230 V	50 Hz / 60 Hz	M	Medium speed
7	Ø 150 mm	55 mm	7	230 V	50 Hz	N	Air intake via struts (Ø mounting bore hole)
7	Ø 150 x 172 mm	38 mm	8	230 V	60 Hz	R	Moisture protection coating
8	80 x 80 mm	38 mm	9	230 V	60 Hz	S	Circuit board and winding (IP 20), optional stainless steel ball bearing
9	119 x 119 mm	25 mm				T	Integrated temperature switch
						U	Mounting bracket
						V	Environmentally friendly fan (min. IP 54)
						W	Air exhaust over struts
						X	Additional wires (standard length 310 mm)
						-xxx	Mounting bore hole 3.7 mm
						Z	Variant number
							Air exhaust over struts, reinforced flange corners with through-holes

All measurements are given in mm.

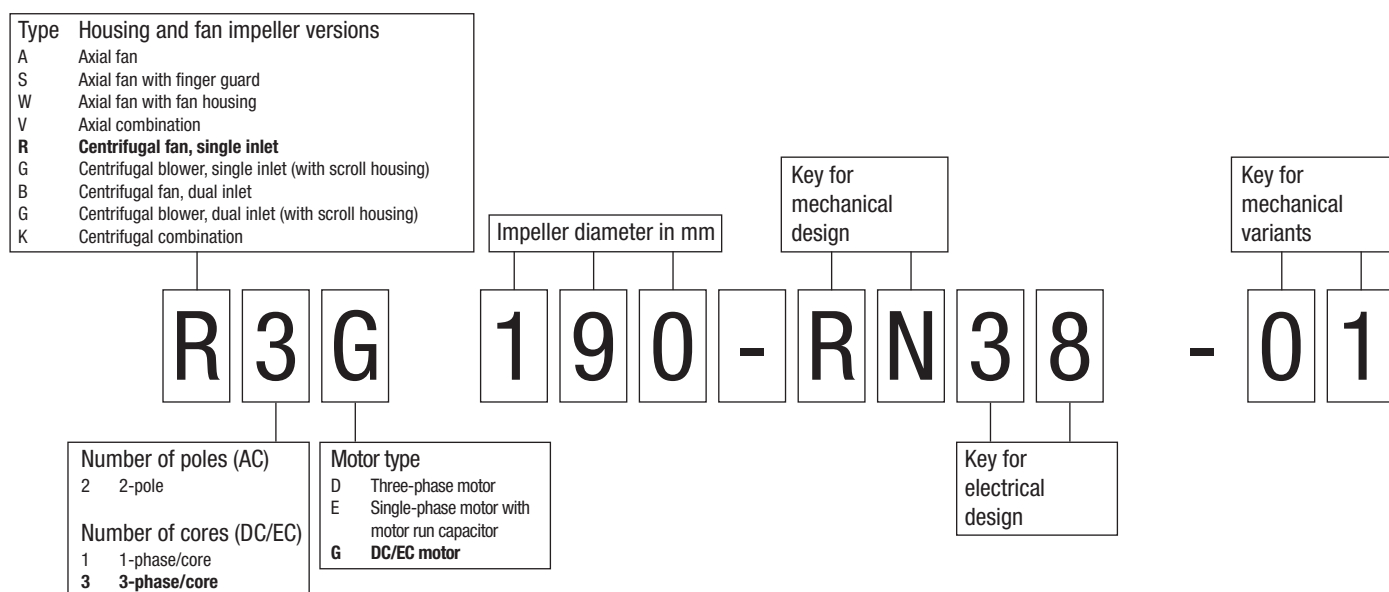
Type code

AC centrifugal fan e.g. RER 160-28/56 S



DC centrifugal fan e.g. R3G 190-RN 38-01

Note: This type code specifies fans from ebm-papst Mulfingen and can be used to clearly identify and order them:



All measurements are given in mm.



DC axial fans



DC axial fan overview

27

DC axial fan / DC diagonal fan

31

DC axial fans

Technical information



Product line

ebm-papst offers you the widest full product line of DC axial and diagonal fans from 25 mm to 280 mm in size. Every single type of fan can be optimally integrated in the respective device concept. The highly economical brushless motor technology of these fans provides a unique variety of intelligent innovations at prices that would have been unthinkable a few years ago.

Electronic protection against reverse polarity

ebm-papst DC fans have electronically commutated drives with electronic protection against reverse polarity. The electronics are integrated in the fan's impeller hub to save space.

Product life expectancy

A distinctive feature of DC fan technology is the amazing product life expectancy. The outstanding efficiency of the brushless drive results in lower heat stress for the bearings, which significantly increases the service life of the fan.

Degree of protection

DC fans with sleeve and ball bearings are powered by class E insulated motors. All ebm-papst fans conform to the requirements of degree of protection IP 20. Fans conforming to IP 54 / IP 68 and special degrees of protection are also available.

Voltage range

Many of our DC fans can be operated on voltages that are up to 50% lower and 25% higher than their nominal voltage (see voltage range in the technical tables). This allows the air performance to be adapted to the cooling requirements and the noise to be reduced, even if the fan does not have a control input.

Closed-loop speed control and monitoring

Closed-loop speed control and function monitoring are becoming increasingly important in many applications. ebm-papst offers many fans in the standard design with a control input and open-collector speed signal.

S-Force

The new S-Force fans with their extremely high blower capacity of up to 1100 m³/h and pressure increase of up to 1400 pascals are capable of dealing with the extreme heat load. If needed, these fans can produce up to 100% more output under full load, and they work with a much broader delivery bandwidth than current models. This makes them ideal for equipment and systems with a high density of components. Thanks to intelligent motor features, they can be adapted individually for any application. S-Force fans are available in standard dimensions. The air flow rate is amazing!

S-Panther

S-Panther power delivered quietly. Wherever there is need for power and reduced noise, fans from the S-Panther range are the right solution. A strong pressure saddle curve at optimum air flow provides the power of a real big cat, an S-Panther.

Axial fans for DC operation

Overview of air performance

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

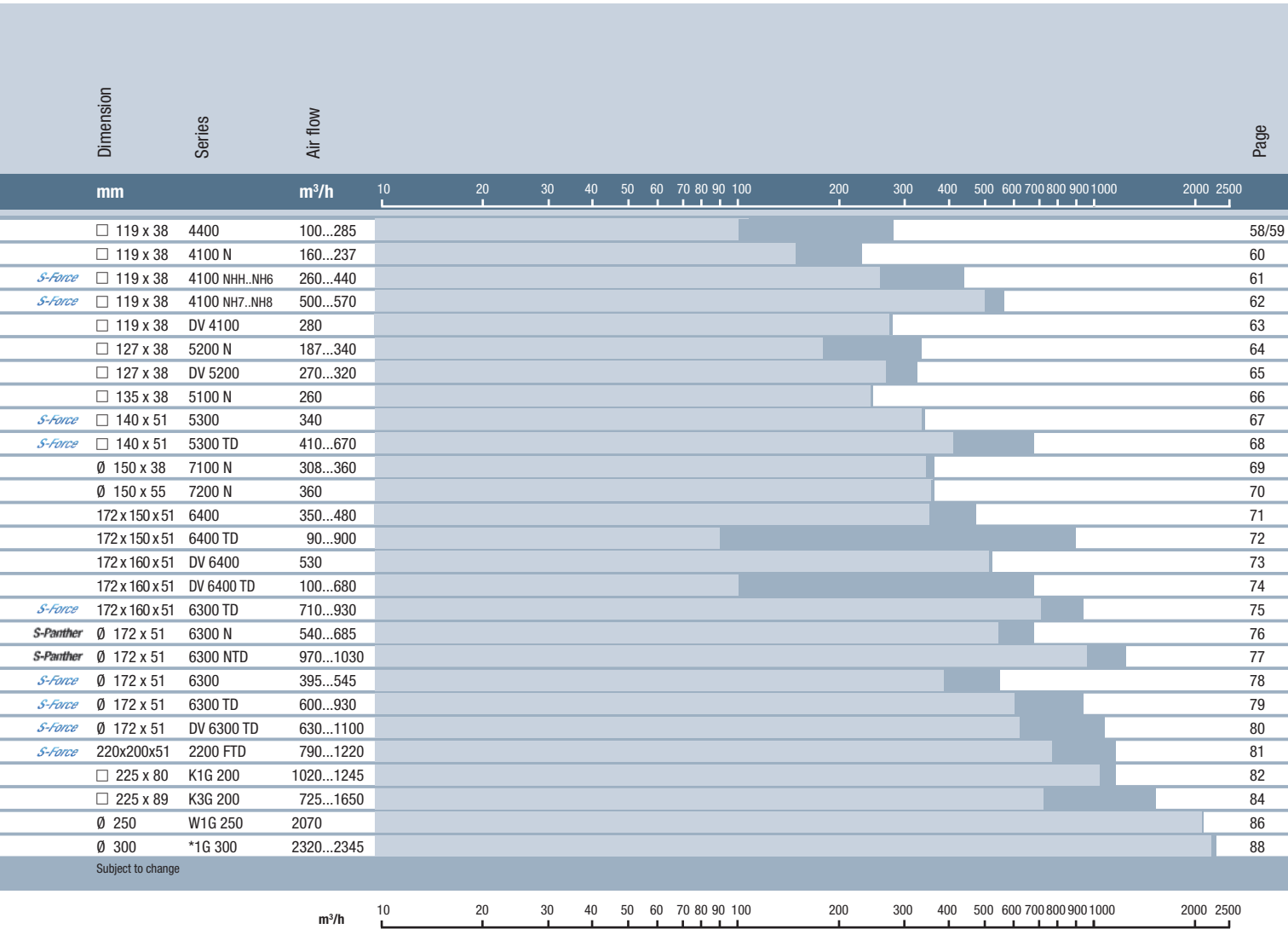
Dimension	Series	Air flow	Page
mm		m³/h	
□ 25 x 8	250	2.3...4.6	31
□ 40 x 10	400 F	6...9	32
□ 40 x 20	400	10...13.5	33
□ 40 x 28	420 J	24...38	34
□ 50 x 15	500 F	11...20	35
□ 60 x 15	600 F	19...33	36
□ 60 x 25	620	21...67	37
□ 60 x 25	630	40...58	38
□ 60 x 25	600 N	21...56	39
□ 60 x 25	600 N VARIOFAN	16...41	40
□ 60 x 32	600 J	70...82	41
□ 70 x 15	700 F	28...44	42
□ 80 x 25	8450	32...117	43
□ 80 x 25	8400 N	33...79	44
□ 80 x 25	8400 N VARIOFAN	20...58	45
□ 80 x 32	8300	32...80	46
□ 80 x 38	8200 J	132...222	47
□ 92 x 25	3400 N	61...102	48
□ 92 x 25	3400 N VARIOFAN	44...84	49
□ 92 x 32	3300 N	56...133	50
<i>S-Force</i> □ 92 x 38	3200 J	130...280	51
<i>S-Panther</i> □ 92 x 38	3250 J	145...270	52
□ 119 x 25	4400 F	94...170	53
Ø 127	4400 F	91	54
□ 119 x 25	4400 FN	200...225	55
□ 119 x 32	4300	95...204	56
□ 119 x 32	4300 VARIOFAN	65...170	57

Subject to change



Axial fans for DC operation

Overview of air performance



Axial fans for DC operation

Overview of technically feasible designs

Dimension		VDE, UL, CSA			SWTET sleeve bearings / ball bearings		Speed signal		Go / NoGo alarm		Alarm with speed limit		External temperature sensor		Internal temperature sensor		PWM control input		Analog control input		Multi-options control input		Moisture protection		IP >= 54		IP 68		Salt spray protection		Reversible direction of rotation		Page	
Axial fans		mm	Series																															
	□ 25 x 8	250	yes	□	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	31
	□ 40 x 10	400 F	yes	□	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	32
	□ 40 x 20	400	yes	□	•	•	–	–	–	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	33
	□ 40 x 28	420 J	yes	■	•	•	–	•	–	•	–	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	34
	□ 50 x 15	500 F	yes	□	•	•	–	–	–	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	35
	□ 60 x 15	600 F	yes	□	•	•	–	–	–	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	36
	□ 60 x 25	620	yes	■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	37
	□ 60 x 25	630	yes	■	•	•	•	•	–	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	38
	□ 60 x 25	600 N	yes	□/■	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	39
	□ 60 x 25	600 N VARIOFAN	yes	□/■	•	•	–	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40
	□ 60 x 32	600 J	yes	■	•	•	–	•	–	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	41
	□ 70 x 15	700 F	yes	□	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	42
	□ 80 x 25	8450	yes	□/■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	43
	□ 80 x 25	8400 N	yes	□/■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	44
	□ 80 x 25	8400 N VARIOFAN	yes	□	•	•	–	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	45
	□ 80 x 32	8300	yes	■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	46
	□ 80 x 38	8200 J	yes	■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	47
	□ 92 x 25	3400 N	yes	□/■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	48
	□ 92 x 25	3400 N VARIOFAN	yes	□	•	•	–	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	49
	□ 92 x 38	3300 N	yes	■	•	•	–	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	50
<i>S-Force</i>	□ 92 x 38	3200 J	yes	■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	51
<i>S-Panther</i>	□ 92 x 38	3250 J	yes	■	•	•	–	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52
	□ 119 x 25	4400 F	yes	□/■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	53
NEW	Ø 172	4400 F	yes	□	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	•	54	
	□ 119 x 25	4400 FN	yes	■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	55
	□ 119 x 32	4300	yes	□/■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	56
	□ 119 x 32	4300 VARIOFAN	yes	■	•	•	•	•	•	•	•	•	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	57
Subject to change																																		

Subject to change

- not yet available
- Available

- Sleeve bearings
- Ball bearings

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects. As a rule, they are not available off the shelf and are based on minimum quantities.

Please consult your customer support representative about the feasibility of your special variant.

Axial fans for DC operation

Overview of technically feasible designs

Dimension	VDE, UL, CSA																	SWTET sleeve bearings / ball bearings																	Speed signal																	Go / NoGo alarm																	Alarm with speed limit																	External temperature sensor																	Internal temperature sensor																	PWM control input																	Analog control input																	Multi-options control input																	Moisture protection																	IP >= 54																	IP 68																	Salt spray protection																	Reversible direction of 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Subject to alterations

– not yet available □ Sleeve bearings
• Available ■ Ball bearings

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects. As a rule, they are not available off the shelf and are based on minimum quantities.

Please consult your customer support representative about the feasibility of your special variant.

Max. 4.6 m³/h

DC axial fans

□ 25 x 8 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 28, TR 64
 - **Weight:** 5 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Moisture protection

1) Fiberglass-reinforced plastic

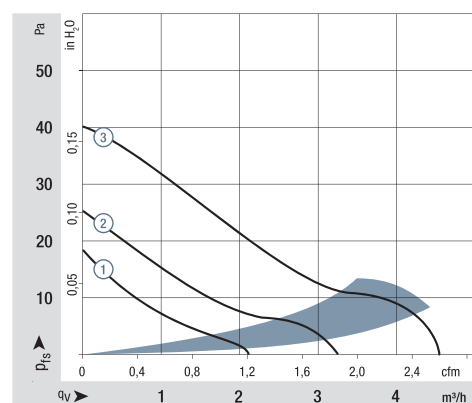
Series 250

Nominal data

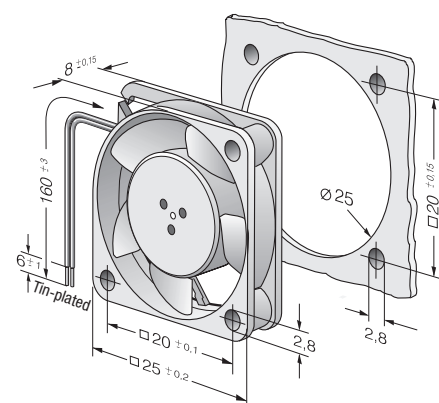
Series 250												Service life L ₁₀ (20 °C) ebm-papst standard	Service life L ₁₀ (60 °C) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range					
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours			
255 M	2.3	1.2	5	4.5...5.5	5	< 3	■	0.2	6 500	-10...+70	45 000 / 17 500	47 500	①		
255 N	3.5	1.9	5	4.5...5.5	16	< 3	■	0.4	9 600	-10...+70	40 000 / 15 000	42 500	②		
255 H	4.6	2.6	5	4.5...5.5	23	4.4	■	0.6	12 000	-10...+55	35 000 / 15 000*	37 500	③		
252 N	3.4	1.9	12	10...14	15	< 3	■	0.5	9 000	-10...+70	40 000 / 15 000	42 500	②		
252 H	4.6	2.6	12	10...14	23	4.4	■	0.7	12 000	-10...+55	35 000 / 15 000*	37 500	③		

Subject to change

* at 55 °C



Air performance measured as per: ISO 5801.
Installation category A, without accidental contact.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 9 m³/h

DC axial fans

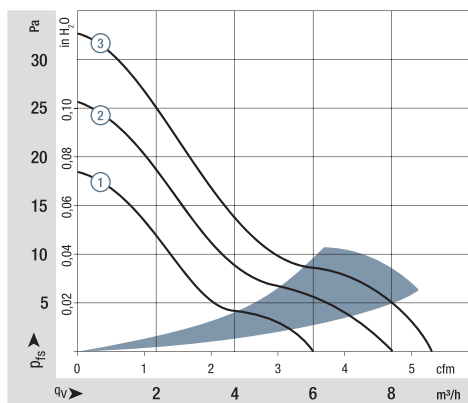
□ 40 x 10 mm



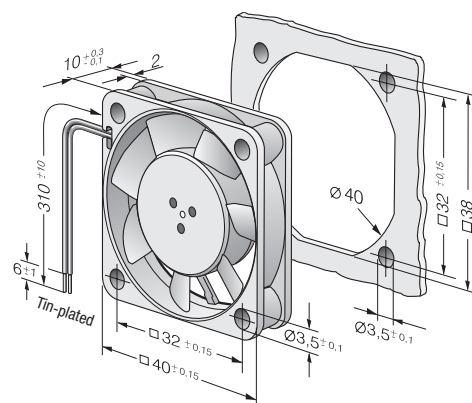
- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 17 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Moisture protection

1) Fiberglass-reinforced plastic

Series 400 F														
Nominal data	Air flow		Nominal voltage	Voltage range	Sound pressure level		Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (20 °C) ebm-papst standard	Service life L ₁₀ (60 °C) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
	m³/h	cfm			dB(A)	Bel(A)								
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	Curve
405 F	8	4.7	5	4.5...5.5	22.1	4.4	□	0.7	5 400	-20...+70	45 000 / 17 500	47 500	47 500	②
405 FH	9	5.3	5	4.5...5.5	26.0	4.6	□	0.9	6 000	-20...+70	45 000 / 17 500	47 500	47 500	③
412 FM	6	3.5	12	10...14	17.0	3.8	□	0.5	4 300	-20...+70	45 000 / 17 500	47 500	47 500	①
412 F	8	4.7	12	10...14	22.1	4.4	□	0.7	5 400	-20...+70	45 000 / 17 500	47 500	47 500	②
412 FH	9	5.3	12	10...14	26.0	4.6	□	0.8	6 000	-20...+70	45 000 / 17 500	47 500	47 500	③
414 F	8	4.7	24	20...28	22.1	4.4	□	0.8	5 400	-20...+70	45 000 / 17 500	47 500	47 500	②
414 FH	9	5.3	24	21.6...26.4	26.0	4.4	□	0.9	6 000	-20...+70	45 000 / 17 500	47 500	47 500	③
Model with temperature range up to +85 °C.														
412 FM-074	6	3.5	12	10...14	17.0	3.8	□	0.4	4 300	-20...+85	45 000 / 17 500	47 500	47 500	①
412 F-130	8	4.7	12	10...14	22.1	4.4	□	0.6	5 400	-20...+85	45 000 / 17 500	47 500	47 500	②
412 FH-132	9	5.3	12	10...14	26.0	4.6	□	0.8	6 000	-20...+85	45 000 / 17 500	47 500	47 500	③
Subject to change														



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 13.5 m³/h

DC axial fans

□ 40 x 20 mm



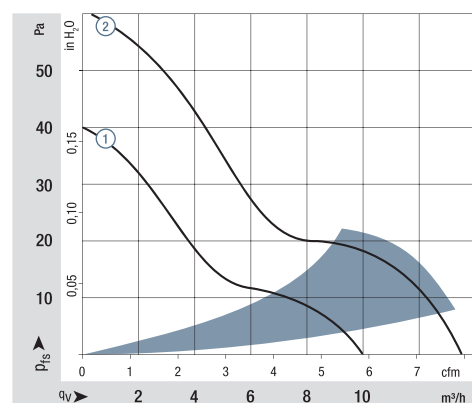
- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 27 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - PWM control input
 - Moisture protection

1) Fiberglass-reinforced plastic

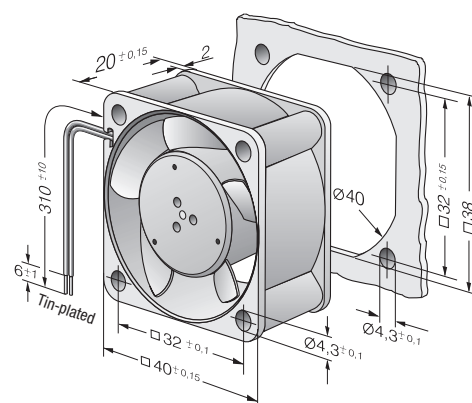
Series 400

Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (20 °C) ebm-papst standard	Service life L ₁₀ (60 °C) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
405	10.0	5.9	5	4.5...5.5	18	3.8	□	0.9	6 000	-20...+70	50 000 / 20 000	52 500	52 500	①
412	10.0	5.9	12	10...14	18	3.8	□	0.8	6 000	-20...+70	50 000 / 20 000	52 500	52 500	①
412 H	13.5	7.9	12	10...14	29	4.7	□	1.6	8 100	-20...+60	45 000 / 17 500	47 500	47 500	②
414	10.0	5.9	24	20...28	18	3.8	□	1.0	6 000	-20...+70	50 000 / 20 000	52 500	52 500	①
414 H	13.5	7.9	24	20...26.5	29	4.7	□	1.7	8 100	-20...+60	45 000 / 17 500	47 500	47 500	②
Model with temperature range up to +85 °C.														
412-099	10.0	5.9	12	10...14	18	3.8	□	0.8	6 000	-20...+85	50 000 / 20 000	52 500	52 500	①
Subject to change														



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 38 m³/h

DC axial fans

□ 40 x 28 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** Via single wires AWG 28,
UL 1061
- **Weight:** 45 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - External temperature sensor
 - PWM control input
 - Moisture protection
 - Salt spray protection

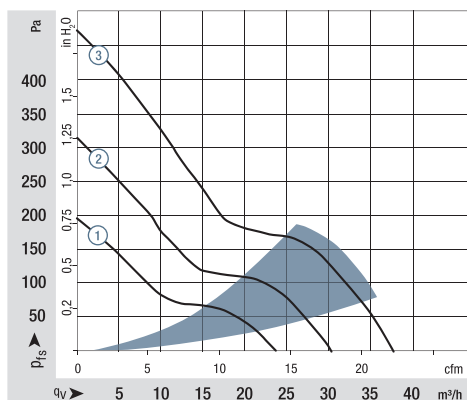
1) Fiberglass-reinforced plastic

Series 420 J

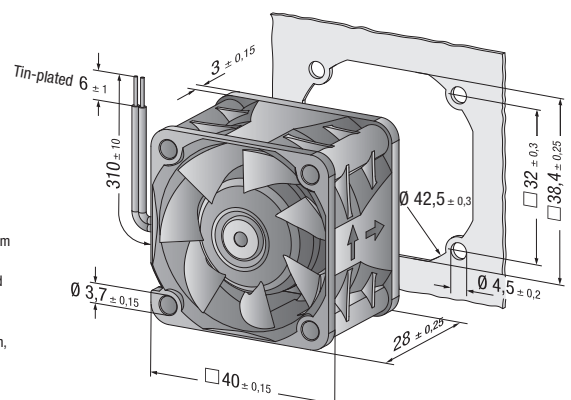
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
422 JM	24	14.2	12	8...13.8	42	5.5	■	2.4	11 400	-20...+70	75 000 / 37 500	127 500	127 500	①
422 JN	31	18.3	12	8...13.8	48	6.0	■	4.1	14 250	-20...+70	67 500 / 35 000	115 000	115 000	②
422 JH	38	22.4	12	8...13.8	54	6.6	■	6.9	17 250	-20...+70	60 000 / 30 000	102 500	102 500	③
424 JM	24	14.2	24	16...28	42	5.5	■	2.7	11 400	-20...+70	75 000 / 37 500	127 500	127 500	①
424 JN	31	18.3	24	16...28	48	6.0	■	4.3	14 250	-20...+70	67 500 / 35 000	115 000	115 000	②
424 JH	38	22.4	24	16...26.4	54	6.6	■	6.9	17 250	-20...+65	60 000 / 32 500	102 500	102 500	③

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from
fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 20 m³/h

DC axial fans

□ 50 x 15 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 28, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures
- **Weight:** 27 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - PWM control input
 - Moisture protection

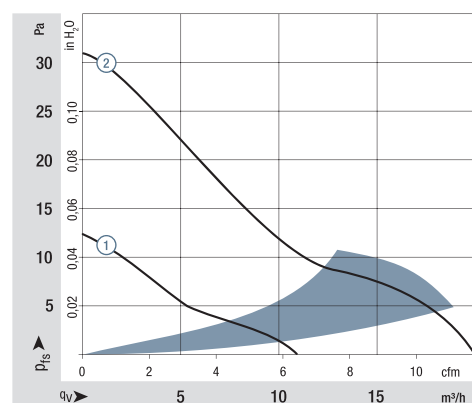
1) Fiberglass-reinforced plastic

Series 500 F

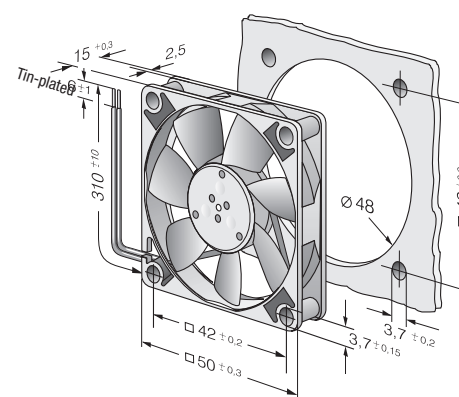
Nominal data

	Air flow		Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (20 °C) ebm-papst standard	Service life L ₁₀ (60 °C) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
512 F	20	11.8	12	10.8...13.2	30	4.5	□	0.8	5 000	-20...+70	50 000 / 20 000	52 500	52 500	②
514 F	20	11.8	24	21.6...26.4	30	4.5	□	0.9	5 000	-20...+70	50 000 / 20 000	52 500	52 500	②
Model with temperature range up to +85 °C.														
512 FL-547	11	6.5	12	10.2...13.8	18	3.7	□	0.4	3 000	-20...+85	50 000 / 20 000	52 500	52 500	①
512 F-532	20	11.8	12	10.8...13.2	30	4.5	□	0.9	5 000	-20...+85	50 000 / 20 000	52 500	52 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. **33** m³/h

DC axial fans

□ 60 x 15 mm

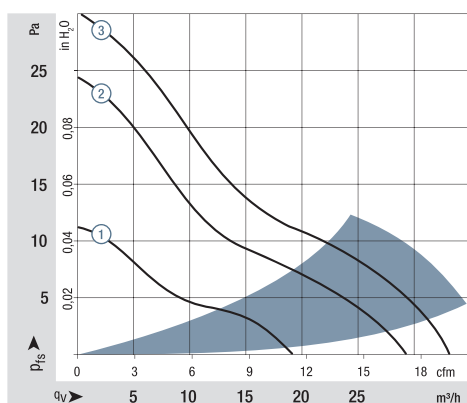


- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** Via single wires AWG 28,
TR 64
- **Highlights:** Some models are suitable
for use at high ambient
temperatures
- **Weight:** 30 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - PWM control input
 - Moisture protection

1) Fiberglass-reinforced plastic

Series 600 F											Service life L ₁₀ (20 °C) ebm-papst standard	Service life L ₁₀ (60 °C) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range				
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
605 F	29	17.1	5	4.5...5.2	27	4.4	■	1.1	4 000	-20...+50	50 000 / 20 000	52 500	②	
612 FL	19	11.2	12	11.5...13.2	16	3.6	■	0.4	2 650	-20...+70	50 000 / 20 000	52 500	①	
612 F	29	17.1	12	10.8...13.2	27	4.4	■	1.0	3 900	-20...+70	50 000 / 20 000	52 500	②	
612 FH	33	19.4	12	10.0...13.2	31	4.8	■	1.5	4 500	-20...+60	45 000 / 17 500	47 500	③	
614 F	29	17.1	24	21.6...26.4	27	4.4	■	1.1	3 900	-20...+70	50 000 / 20 000	52 500	②	
614 F/39 H-691	33	19.4	24	16...28	31	4.8	■	1.4	4 500	-20...+60	45 000 / 17 500	47 500	③	
Model with temperature range up to +80 / 85 °C.														
612 FL-680	19	11.2	12	11.5...14	16	3.6	■	0.5	2 650	-20...+85	50 000 / 20 000	52 500	①	
612 F-637	29	17.1	12	10.8...12.6	27	4.4	■	1.0	3 900	-20...+80	50 000 / 20 000	52 500	②	

Subject to change

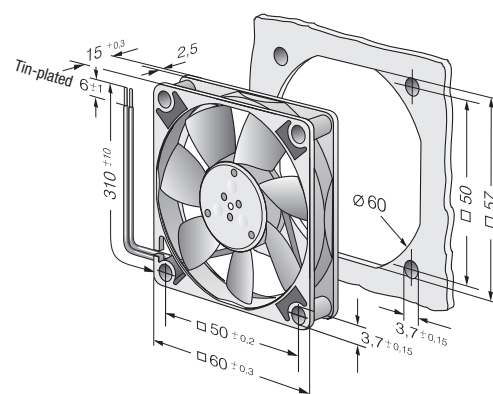


Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_p measured at 1 m distance from
fan axis.

The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.

In the event of deviation from the standard configuration,
the parameters must be checked after installation!

For detailed information see
http://www.embpapst.com/general_conditions



Max. 67 m³/h

DC axial fans

□ 60 x 25 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Very low-noise motor
- **Weight:** 85 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

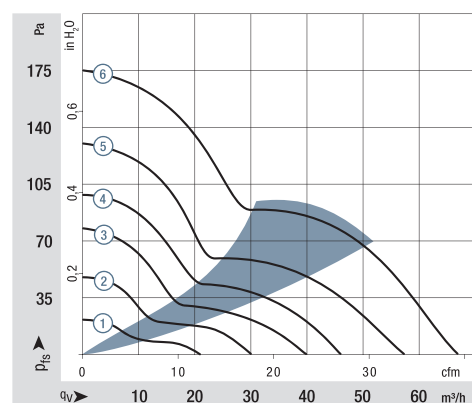
1) Fiberglass-reinforced plastic

Series 620

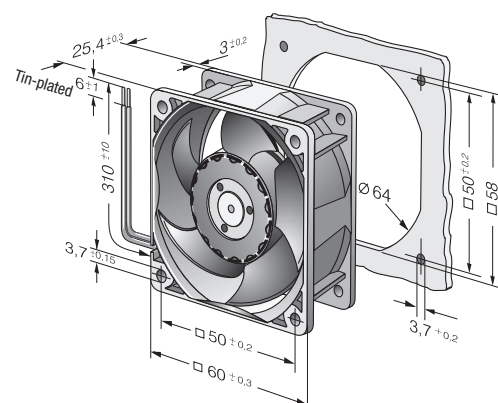
Nominal data

Series 620												Service life L ₁₀ (40 °C) ebm-papst standard		Service life L ₁₀ (T _{max}) ebm-papst standard		Life expectancy L ₁₀ IPC (40 °C) see page 17			
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range								Curve
Type		m³/hcfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours							
622 L		21	12.4	12	8...15	20	3.7	■	0.5	3 200	-20...+85	80 000 / 20 000	135 000						①
622 M		30	17.7	12	8...15	29	4.3	■	1.0	4 550	-20...+75	77 500 / 30 000	130 000						②
622 N		40	23.5	12	8...15	35	4.7	■	1.9	6 100	-20...+70	72 500 / 35 000	122 500						③
622 H		46	27.1	12	8...15	39	5.1	■	2.3	6 850	-20...+70	70 000 / 35 000	117 500						④
622 HH		56	33.0	12	8...15	43	5.6	■	3.5	8 200	-20...+70	65 000 / 32 500	110 000						⑤
622/2 H3P		67	39.4	12	8...13.2	48	5.9	■	5.5	9 700	-20...+60	52 500 / 32 500	87 500						⑥
624 L		21	12.4	24	18...28	20	3.7	■	1.0	3 200	-20...+70	80 000 / 40 000	135 000						①
624 M		30	17.7	24	12...28	29	4.3	■	1.5	4 550	-20...+70	77 500 / 37 500	130 000						②
624 N		40	23.5	24	12...28	35	4.7	■	2.2	6 100	-20...+70	72 500 / 35 000	122 500						③
624 H		46	27.1	24	18...28	39	5.1	■	2.4	6 850	-20...+70	70 000 / 35 000	117 500						④
624 HH		56	33.0	24	18...28	43	5.6	■	3.6	8 200	-20...+70	65 000 / 32 500	110 000						⑤
624/2 H3P		67	39.4	24	18...28	48	5.9	■	5.6	9 700	-20...+60	52 500 / 32 500	87 500						⑥
628 HH		56	33.0	48	36...60	43	5.6	■	4.2	8 200	-20...+70	65 000 / 32 500	110 000						⑤

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 58 m³/h

DC axial fans

□ 60 x 25 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Developed for applications with demanding environmental requirements
- **Weight:** 70 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

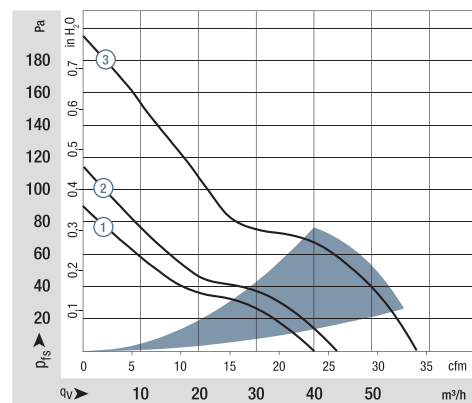
1) Fiberglass-reinforced plastic

Series 630

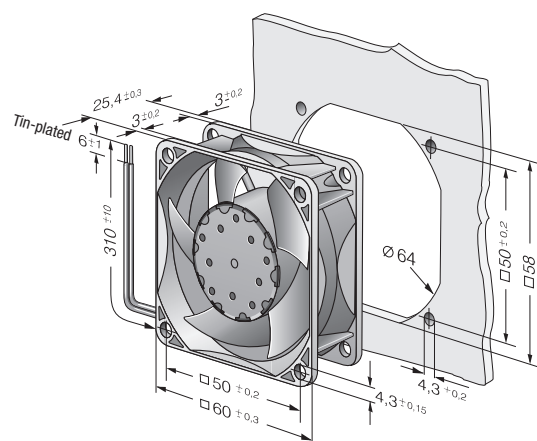
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
632 NU	40	23.5	12	6...15	33	5.2	■	1.8	5 900	-20...+70	85 000 / 42 500	142 500	142 500	①
632/2 HPU	44	25.9	12	10.8...13.2	35	5.4	■	1.5	6 300	-20...+70	85 000 / 42 500	142 500	142 500	②
634 NU	40	23.5	24	12...30	34	5.1	■	1.6	5 900	-20...+70	85 000 / 42 500	142 500	142 500	①
634 HHU	58	34.1	24	18...28	44	6.1	■	3.2	8 500	-20...+70	75 000 / 37 500	127 500	127 500	③
634/2 HHPU	58	34.1	24	18...28	44	6.1	■	3.2	8 500	-20...+70	75 000 / 37 500	127 500	127 500	③
638/2 HPU	44	25.9	48	40...60	35	5.4	■	1.8	6 300	-20...+70	85 000 / 42 500	142 500	142 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 56 m³/h

DC axial fans

□ 60 x 25 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



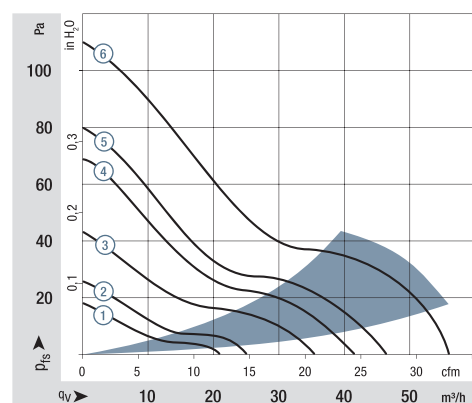
- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Some models are suitable for use at high ambient temperatures up to 85 °C.
- **Weight:** 66 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Moisture protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

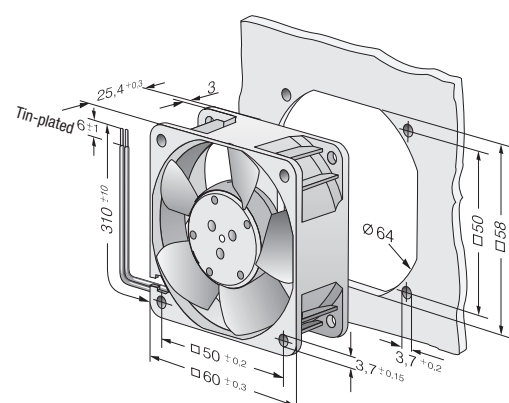
Series 600 N

Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C)	Service life L ₁₀ (T _{max})	Life expectancy L ₁₀ IPC	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
612 NGLE	21	12.4	12	8...15	16	3.6	□	0.6	2 500	-20...+85	80 000 / 27 500	135 000	135 000	①
612 NLE	21	12.4	12	8...15	16	3.6	■	0.4	2 500	-20...+85	80 000 / 27 500	135 000	135 000	①
612 NGMLE	25	14.7	12	8...15	19	3.9	□	0.7	3 000	-20...+80	80 000 / 32 500	135 000	135 000	②
612 NMLE	25	14.7	12	8...15	19	3.9	■	0.4	3 000	-20...+85	80 000 / 27 500	135 000	135 000	②
612 NGME	35	20.6	12	8...15	28	4.6	□	1.2	4 100	-20...+75	80 000 / 35 000	135 000	135 000	③
612 NME	35	20.6	12	8...15	28	4.6	■	0.8	4 100	-20...+75	80 000 / 35 000	135 000	135 000	③
612 NN	42	24.7	12	8...15	35	5.0	■	1.5	5 100	-20...+70	70 000 / 35 000	117 500	117 500	④
612 NH	43	25.3	12	8...15	37	5.3	■	1.8	5 600	-20...+70	70 000 / 35 000	117 500	117 500	⑤
612 NHH-118	56	33.0	12	8...15	41	5.7	■	2.9	6 800	-20...+70	60 000 / 30 000	102 500	102 500	⑥
614 NGL	21	12.4	24	18...28	16	3.6	□	1.0	2 500	-20...+70	80 000 / 40 000	135 000	135 000	①
614 NL	21	12.4	24	18...28	16	3.6	■	0.8	2 500	-20...+70	80 000 / 40 000	135 000	135 000	①
614 NGML	25	14.7	24	18...28	19	3.9	□	1.2	3 000	-20...+70	80 000 / 40 000	135 000	135 000	②
614 NML	25	14.7	24	18...28	19	3.9	■	1.0	3 000	-20...+70	80 000 / 40 000	135 000	135 000	②
614 NGM	35	20.6	24	18...28	28	4.6	□	1.7	4 100	-20...+70	80 000 / 40 000	135 000	135 000	③
614 NM	35	20.6	24	18...28	28	4.6	■	1.3	4 100	-20...+70	80 000 / 40 000	135 000	135 000	③
614 NN	42	24.7	24	18...28	35	5.0	■	1.8	5 100	-20...+70	70 000 / 35 000	117 500	117 500	④
614 NH	43	25.3	24	18...26	37	5.3	■	2.1	5 600	-20...+70	70 000 / 35 000	117 500	117 500	⑤
614 NHH	56	33.0	24	18...26	41	5.7	■	2.9	6 850	-20...+70	60 000 / 30 000	102 500	102 500	⑥
614 NHH-119	56	33.0	24	18...28	41	5.7	■	2.9	6 850	-20...+70	60 000 / 30 000	102 500	102 500	⑥
618 NM	35	20.6	48	36...56	28	4.6	■	1.9	4 100	-20...+70	80 000 / 40 000	135 000	135 000	③
618 NN	42	24.7	48	36...56	35	5.0	■	2.1	5 100	-20...+65	70 000 / 40 000	117 500	117 500	④



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 41 m³/h

DC axial fans

□ 60 x 25 mm

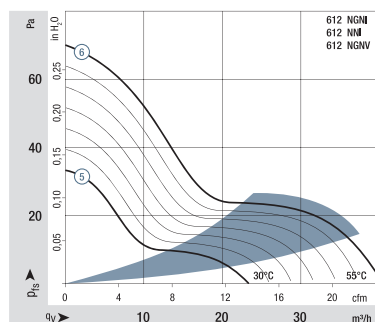
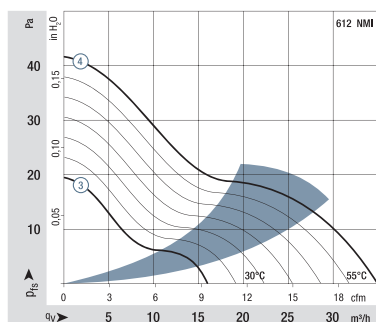
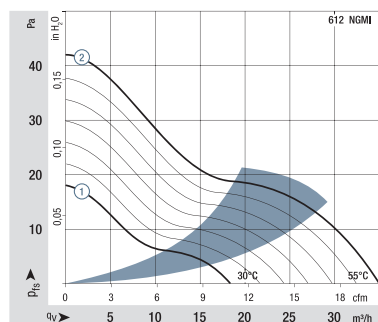


- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Automatic speed adjustment with temperature sensor
- **Weight:** 66 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - External temperature sensor
 - Internal temperature sensor
 - Moisture protection

1) Fiberglass-reinforced plastic

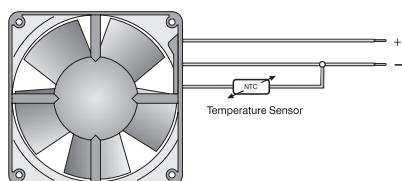
Series 600 N VARIOFAN		Air flow		Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type		m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
30°C 55°C	612 NGMI	18	10.6	12	8...12.6	14	3.5	□	1.3	2 150	-20...+65	80 000 / 45 000	135 000		①
		35	20.6			28	4.6		1.7	4 100					②
30°C 55°C	612 NMI	16	9.4	12	8...12.6	16	3.6	■	1.0	2 400	-20...+65	80 000 / 45 000	135 000		③
		35	20.6			28	4.6		1.4	4 100					④
30°C 55°C	612 NGNI	23	13.5	12	8...12.6	18	3.8	□	1.7	2 900	-20...+65	70 000 / 40 000	117 500		⑤
		41	24.1			35	5.0		2.4	5 100					⑥
30°C 55°C	612 NNI	23	13.5	12	8...12.6	18	3.8	■	1.2	2 900	-20...+65	70 000 / 40 000	117 500		⑤
		41	24.1			35	5.0		1.5	5 100					⑥
30°C 55°C	612 NGNV	23	13.5	12	8...12.6	18	3.8	□	1.7	2 900	-20...+65	70 000 / 40 000	117 500		⑤
		41	24.1			35	5.0		2.4	5 100					⑥

Subject to change



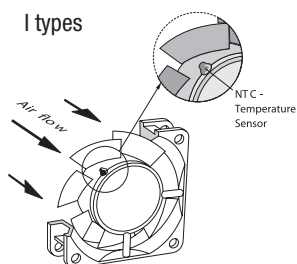
Air performance measured according to: ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on half-sphere of 2 m; Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/> general conditions

V types

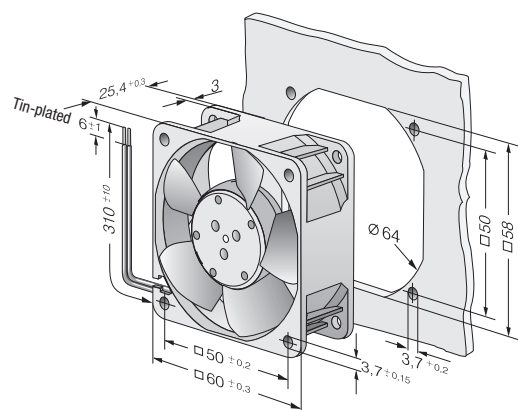


The temperature sensor for controlling the motor speed is not included in the scope of delivery.
For the temperature sensor LZ 370, see accessories.

I types



The temperature sensor (NTC resistor) for controlling the motor speed is positioned in the fan hub directly in the air flow.



Max. 82 m³/h

DC axial fans

□ 60 x 32 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** Via single wires AWG 24, TR 64
 - **Weight:** 100 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

1) Fiberglass-reinforced plastic

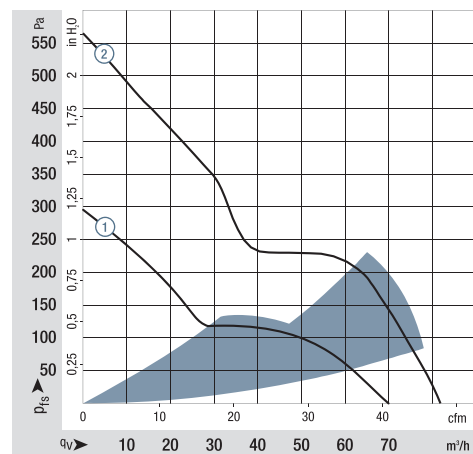
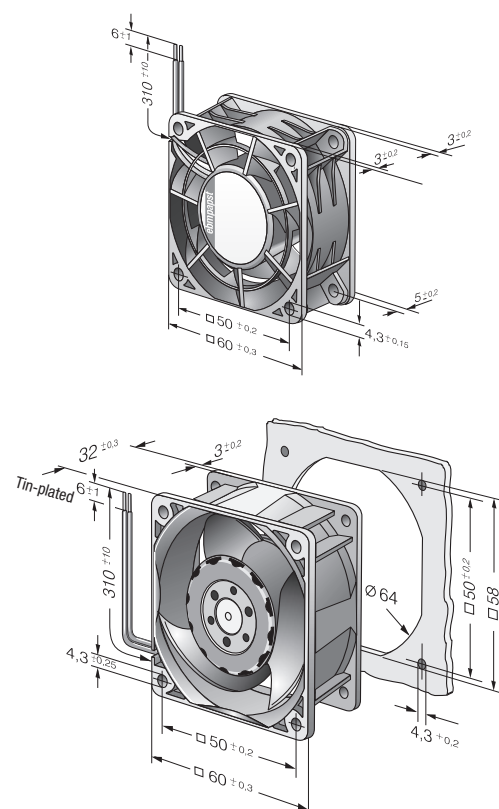
Series 600 J

Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
612 JH	70	41.1	12	7...13.6	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	97 500	97 500	①
614 JH	70	41.1	24	14...26.4	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	97 500	97 500	①
618 JH	70	41.1	48	36...56	53	6.4	■	7.7	11 700	-20...+70	57 500 / 27 500	97 500	97 500	①
Fan types with streamer and integrated guard grille.														
614 J/2 HHP	82	48.3	24	18...30	62	7.6	■	14.6	15 000	-20...+75	65 000 / 25 000	110 000	110 000	②
618 J/2 HHP	82	48.3	48	38...58	62	7.6	■	14.6	15 000	-20...+75	65 000 / 25 000	110 000	110 000	②

Subject to change

Rear view of types 614 J/2HHP and 618 J/2HHP



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general-conditions>

Max. 44 m³/h

DC axial fans

□ 70 x 15 mm



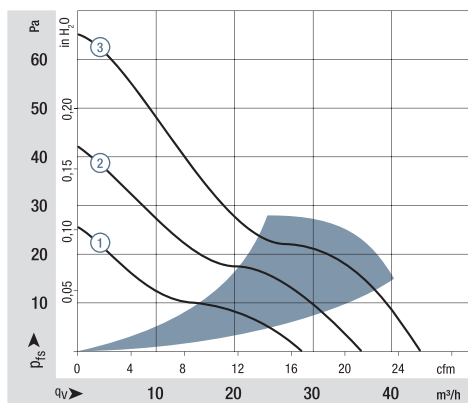
- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24 to AWG 28, TR 64
- **Weight:** 53 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Moisture protection

1) Fiberglass-reinforced plastic

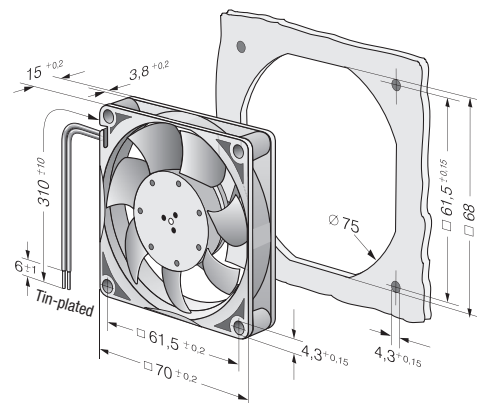
Series 700 F														
Nominal data	Air flow		Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
	m³/h	cfm												
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	Curve
712 F/2L-005*	28	16.5	12	8...13.8	25	4.7	□	0.6	3 300	-20...+70	60 000 / 30 000	102 500	102 500	①
712 F/2M-006*	36	21.2	12	8...13.8	32	5.0	□	1.1	4 300	-20...+70	60 000 / 30 000	102 500	102 500	②
712 F	44	25.9	12	8...13.8	38	5.3	□	1.7	5 300	-20...+70	60 000 / 30 000	102 500	102 500	③
714 F	44	25.9	24	18...28	38	5.3	□	1.5	5 300	-20...+70	60 000 / 30 000	102 500	102 500	③

Subject to change

*Version with 3-pin Molex plug housing 22-01-2035
Molex Contacts 08-50-0113



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 117 m³/h

DC axial fans

□ 80 x 25 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 24, TR 64
 - **Highlights:** Very low-noise motor
 - **Weight:** 105 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

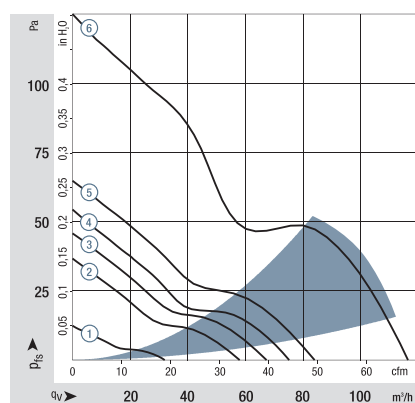
1) Fiberglass-reinforced plastic

Series 8450

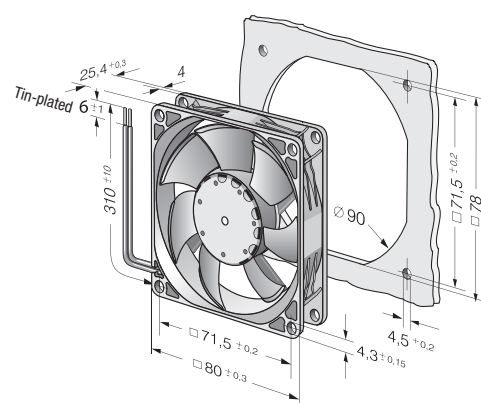
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C)	Service life L ₁₀ (T _{max})	Life expectancy L ₁₀ IPC	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
8452 GL	32	18.8	12	8...15	14	3.3	□	0.4	1 700	-20...75	80 000 / 35 000		135 000	①
8452 GM	58	34.1	12	8...15	32	4.7	□	1.3	3 100	-20...75	80 000 / 35 000		135 000	②
8452 GN	68	40.0	12	8...15	36	5.0	□	1.8	3 600	-20...70	70 000 / 35 000		117 500	③
Models with 25 kHz PWM control and speed signal to 4-wire specification (see page 179).														
8452/2 GHP	75	44.1	12	10.8...13.2	38	5.3	□	2.5	4 000	-20...70	70 000 / 35 000		117 500	④
8452/2 GHHP	83	48.8	12	10.8...13.2	42	5.5	□	3.5	4 400	-20...60	65 000 / 40 000		110 000	⑤
Models with 1-30 kHz PWM control and speed signal.														
8452/2 H4P	117	68.8	12	8...15	50	6.4	■	6.8	6 200	-20...70	60 000 / 30 000		102 500	⑥
8454/2 H4P	117	68.8	24	20.0...26.4	50	6.4	■	6.8	6 200	-20...70	60 000 / 30 000		102 500	⑥

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 79 m³/h

DC axial fans

□ 80 x 25 mm



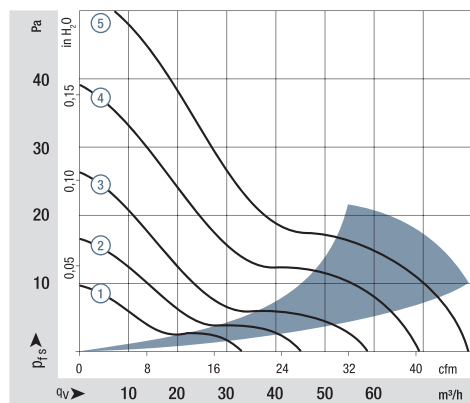
- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 24, TR 64
 - **Highlights:** Some models are suitable for use at high ambient temperatures up to 85 °C.
 - **Weight:** 95 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 8400 N

Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
8412 NGLE	33	19.4	12	8...15	12	3.5	□	0.5	1 500	-20...+85	80 000 / 27 500	135 000	135 000	①
8412 NLE	33	19.4	12	8...15	17	3.7	■	0.3	1 500	-20...+85	80 000 / 27 500	135 000	135 000	①
8412 NGMLE	45	26.5	12	8...15	19	3.9	□	0.9	2 050	-20...+80	80 000 / 32 500	135 000	135 000	②
8412 NMLE	45	26.5	12	8...15	21	4.0	■	0.6	2 050	-20...+85	80 000 / 27 500	135 000	135 000	②
8412 NGME	58	34.1	12	8...15	26	4.3	□	1.4	2 600	-20...+75	80 000 / 35 000	135 000	135 000	③
8412 NME	58	34.1	12	8...15	27	4.4	■	1.0	2 600	-20...+75	80 000 / 35 000	135 000	135 000	③
8412 NG	69	40.6	12	8...15	32	4.7	□	2.0	3 100	-20...+70	70 000 / 35 000	117 500	117 500	④
8412 N	69	40.6	12	8...15	32	4.7	■	1.7	3 100	-20...+70	70 000 / 35 000	117 500	117 500	④
8412 NH	79	46.5	12	8...13.2	37	5.0	■	2.1	3 600	-20...+70	70 000 / 35 000	117 500	117 500	⑤
8412 NH-217	79	46.5	12	8...15	37	5.0	■	2.5	3 600	-20...+70	70 000 / 35 000	117 500	117 500	⑤
8414 NGL	33	19.4	24	18...28	12	3.5	□	0.9	1 500	-20...+70	80 000 / 40 000	135 000	135 000	①
8414 NL	33	19.4	24	18...28	17	3.7	■	0.8	1 500	-20...+70	80 000 / 40 000	135 000	135 000	①
8414 NGML	45	26.5	24	18...28	19	3.9	□	1.2	2 050	-20...+70	80 000 / 40 000	135 000	135 000	②
8414 NML	45	26.5	24	18...28	21	4.0	■	1.1	2 050	-20...+70	80 000 / 40 000	135 000	135 000	②
8414 NGM	58	34.1	24	18...28	26	4.3	□	1.4	2 600	-20...+70	80 000 / 40 000	135 000	135 000	③
8414 NM	58	34.1	24	18...28	27	4.4	■	1.4	2 600	-20...+70	80 000 / 40 000	135 000	135 000	③
8414 NG	69	40.6	24	18...28	32	4.7	□	2.2	3 100	-20...+70	70 000 / 35 000	117 500	117 500	④
8414 N	69	40.6	24	18...28	32	4.7	■	1.8	3 100	-20...+70	70 000 / 35 000	117 500	117 500	④
8414 NH	79	46.5	24	18...26	37	5.0	■	2.4	3 600	-20...+70	70 000 / 35 000	117 500	117 500	⑤
8414 NH-221	79	46.5	24	18...28	37	5.0	■	2.2	3 600	-20...+70	70 000 / 35 000	117 500	117 500	⑤
8418 N	69	40.6	48	36...56	32	4.7	■	2.0	3 100	-20...+70	70 000 / 35 000	117 500	117 500	④



Max. 58 m³/h

DC axial fans

□ 80 x 25 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Automatic speed adjustment with temperature sensor
- **Weight:** 95 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - External temperature sensor
 - Internal temperature sensor
 - Moisture protection

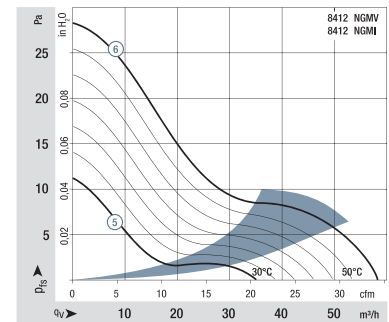
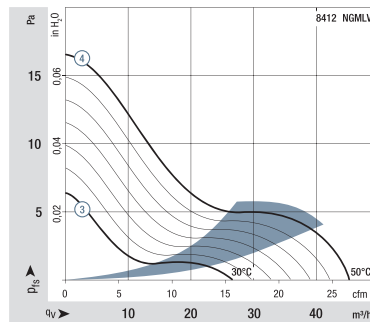
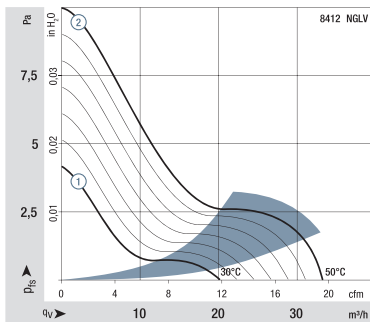
1) Fiberglass-reinforced plastic

Series 8400 N
VARIOFAN

Nominal data

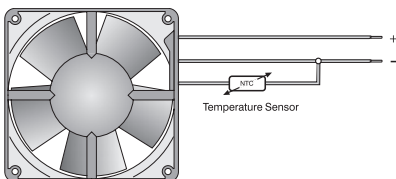
Type	Air flow m³/h	Air flow cfm	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Sinter sleeve bearings Ball bearings	Power consumption Watts	Nominal speed rpm ⁻¹	Temperature range °C	Service life L ₁₀ (40 °C) ebm-papst standard Hours	Service life L ₁₀ (T _{max}) ebm-papst standard Hours	Life expectancy L ₁₀ IPC (40 °C) see page 17 Hours	Curve
30 °C 50 °C	20 33	11.8 19.4	12	10...14	< 10 12	< 3 3.5	□ ■	0.9 1.1	900 1 500	-20...+65	80 000 / 45 000	135 000	135 000	① ②
30 °C 50 °C	27 45	15.9 26.6	12	8...14	< 10 19	3.0 3.9	□ ■	1.1 1.5	1 200 2 050	-20...+65	80 000 / 45 000	135 000	135 000	③ ④
30 °C 50 °C	35 58	20.6 34.1	12	8...14	< 13 26	3.5 4.3	□ ■	1.4 2.0	1 600 2 600	-20...+65	80 000 / 45 000	135 000	135 000	⑤ ⑥

Subject to change



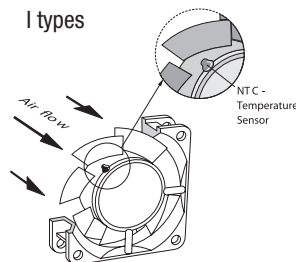
Air performance measured according to: ISO 5801. Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on half-sphere of 2 m; Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

V types

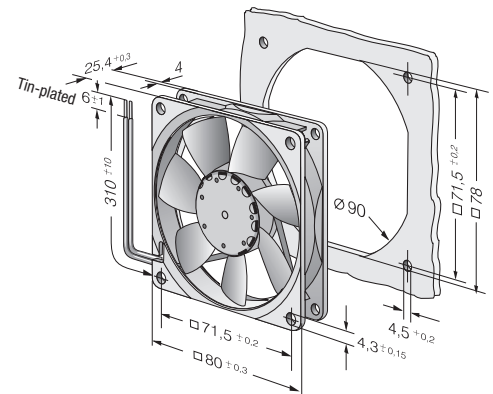


The temperature sensor for controlling the motor speed is not included in the scope of delivery.
For the temperature sensor LZ 370, see accessories.

I types



The temperature sensor (NTC resistor) for controlling the motor speed is positioned in the fan hub directly in the air flow.



Max. 80 m³/h

DC axial fans

□ 80 x 32 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** Via single wires AWG 22,
TR 64
- **Weight:** 170 g

- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

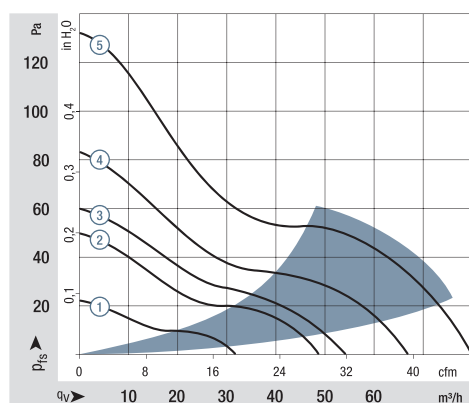
1) Fiberglass-reinforced plastic

Series 8300

Nominal data

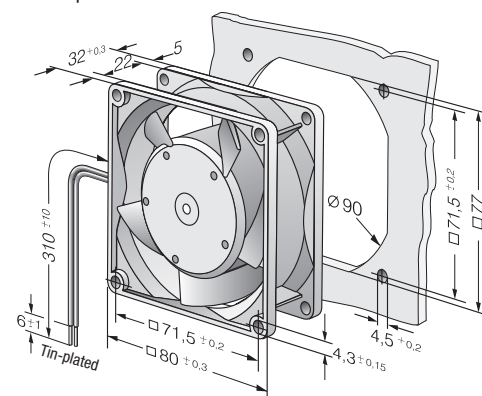
Series 8300												Service life L ₁₀ (40 °C) ebm-papst standard		Service life L ₁₀ (T _{max}) ebm-papst standard		Life expectancy L ₁₀ IPC (40 °C) see page 17			
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range								
Type		m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours		Hours				Curve	
8312 L		32	18.8	12	6...15	24	4.0	■	1.2	2 000	-20...+75	80 000 / 32 500		135 000				①	
8312 M		48	28.3	12	6...15	34	5.0	■	2.2	3 000	-20...+75	70 000 / 27 500		117 500				②	
8312		54	31.8	12	6...15	36	5.2	■	2.6	3 300	-20...+75	70 000 / 27 500		117 500				③	
8312 HL		67	39.4	12	6...15	43	5.8	■	4.0	4 200	-20...+75	62 500 / 25 000		105 000				④	
8312 H		80	47.1	12	6...12.6	48	6.2	■	6.4	5 000	-20...+60	55 000 / 35 000		92 500				⑤	
8314 L		32	18.8	24	12...31.5	24	4.0	■	1.0	2 000	-20...+75	80 000 / 32 500		135 000				①	
8314 M		48	28.3	24	12...31.5	34	5.0	■	2.3	3 000	-20...+75	70 000 / 27 500		117 500				②	
8314		54	31.8	24	12...31.5	36	5.2	■	2.7	3 300	-20...+75	70 000 / 27 500		117 500				③	
8314 HL		67	39.4	24	12...31.5	43	5.8	■	4.3	4 200	-20...+75	62 500 / 25 000		105 000				④	
8314 H		80	47.1	24	12...28	48	6.2	■	6.0	5 000	-20...+75	55 000 / 20 000		92 500				⑤	
8318		54	31.8	48	36...60	36	5.2	■	3.0	3 300	-20...+75	70 000 / 27 500		117 500				③	
8318 HL		67	39.4	48	36...60	43	5.8	■	4.2	4 200	-20...+75	62 500 / 25 000		105 000				④	
8318 H		80	47.1	48	36...60	48	6.2	■	6.2	5 000	-20...+65	55 000 / 30 000		92 500				⑤	

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>

Rotor protrusion max. 0.4 mm.



Max. 222 m³/h

DC axial fans

□ 80 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 24 (H3 and H4: AWG 22), TR 64
 - **Weight:** 160 g (H3 and H4: 200 g)
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 8200 J

Nominal data

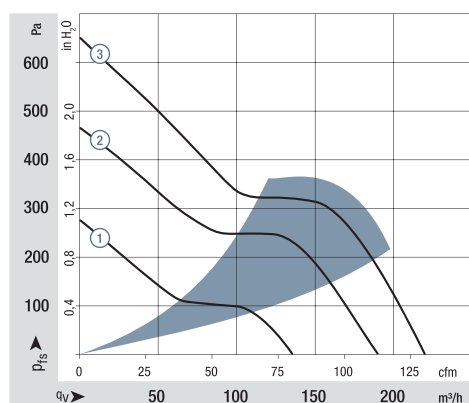
	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C)	Service life L ₁₀ (T _{max})	Life expectancy L ₁₀ IPC	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
8212 JN	132	78	12	7...13.8	55	6.6	■	10	8 400	-20...+70	62 500 / 32 500	105 000	105 000	①
8212 JH3 <i>S-Force</i>	190	112	12	6...13.8	66	7.3	■	26*	12 000	-20...+70	55 000 / 27 500	92 500	92 500	②
8212 JH4 <i>S-Force</i>	222	131	12	6...13.8	71	7.8	■	39*	14 000	-20...+70	50 000 / 25 000	85 000	85 000	③
8214 JN	132	78	24	18...26.4	55	6.6	■	11	8 400	-20...+70	62 500 / 32 500	105 000	105 000	①
8214 JH3 <i>S-Force</i>	190	112	24	12...27.6	66	7.3	■	26*	12 000	-20...+70	55 000 / 27 500	92 500	92 500	②
8214 JH4 <i>S-Force</i>	222	131	24	12...27.6	71	7.8	■	38*	14 000	-20...+70	50 000 / 25 000	85 000	85 000	③
8218 JN	132	78	48	36...53	55	6.6	■	11	8 400	-20...+70	62 500 / 32 500	105 000	105 000	①
8218 JH3 <i>S-Force</i>	190	112	48	36...53	66	7.3	■	25*	12 000	-20...+70	55 000 / 27 500	92 500	92 500	②
8218 JH4 <i>S-Force</i>	222	131	48	20...58	71	7.8	■	36*	14 000	-20...+70	50 000 / 25 000	85 000	85 000	③

Subject to change

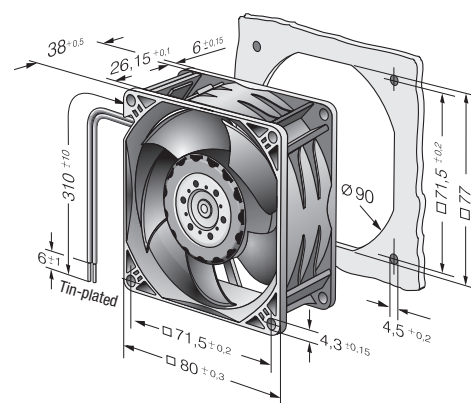
8200 JH3 and JH4 also available as standard with PWM control input and speed signal.

Speed control range from 2000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 102 m³/h

DC axial fans

□ 92 x 25 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** Via single wires AWG 24,
TR 64
- **Weight:** 100 g

- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54 / IP 68

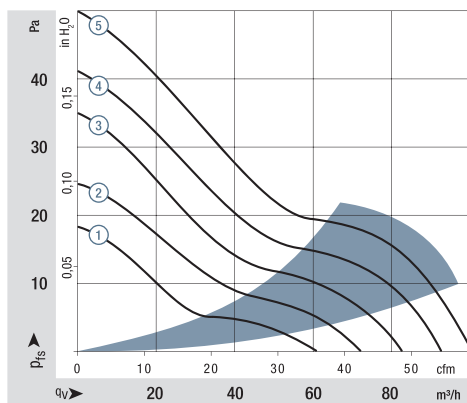
1) Fiberglass-reinforced plastic

Series 3400 N

Nominal data

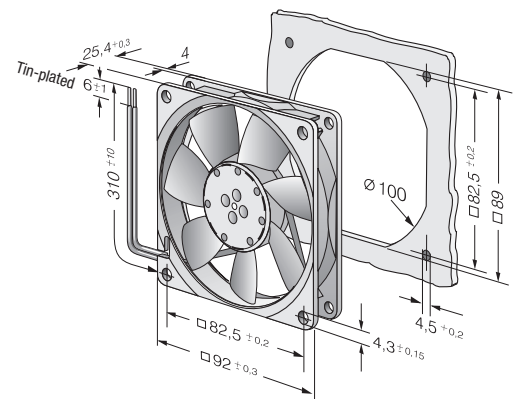
Series 3400 N																
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17	Curve		
	Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours			
3412 NGLE	61	35.9	12	8...15	23	4.0	■	1.1	1 950	-20...+80	80 000 / 22 500	135 000	①			
3412 NLE	61	35.9	12	8...15	23	4.0	■	0.8	1 950	-20...+85	80 000 / 17 500	135 000	①			
3412 NGME	72	42.4	12	8...15	28	4.3	■	1.6	2 300	-20...+75	75 000 / 27 500	127 500	②			
3412 NME	72	42.4	12	8...15	28	4.3	■	1.1	2 300	-20...+75	75 000 / 27 500	127 500	②			
3412 NG	84	49.4	12	8...15	32	4.7	■	1.9	2 700	-20...+70	70 000 / 35 000	117 500	③			
3412 N	84	49.4	12	8...15	32	4.7	■	1.7	2 700	-20...+70	70 000 / 35 000	117 500	③			
3412 NGH	94	55.3	12	8...15	36	5.0	■	2.3	3 000	-20...+70	70 000 / 35 000	117 500	④			
3412 NH	94	55.3	12	8...15	36	5.0	■	2.1	3 000	-20...+70	70 000 / 35 000	117 500	④			
3412 NGH	102	60.0	12	8...13.2	39	5.1	■	3.2	3 250	-20...+60	70 000 / 45 000	117 500	⑤			
3412 NHH	102	60.0	12	8...13.2	39	5.1	■	2.9	3 250	-20...+60	70 000 / 45 000	117 500	⑤			
3412 NHH-379	102	60.0	12	8...15	39	5.1	■	2.7	3 250	-20...+70	70 000 / 35 000	117 500	⑤			
3414 NGL	61	35.9	24	18...28	23	4.0	■	1.4	1 950	-20...+70	80 000 / 40 000	135 000	①			
3414 NL	61	35.9	24	18...28	23	4.0	■	1.1	1 950	-20...+70	80 000 / 40 000	135 000	①			
3414 NGM	72	42.4	24	18...28	28	4.3	■	1.7	2 300	-20...+70	75 000 / 37 500	127 500	②			
3414 NM	72	42.4	24	18...28	28	4.3	■	1.4	2 300	-20...+70	75 000 / 37 500	127 500	②			
3414 NG	84	49.4	24	18...28	32	4.7	■	2.5	2 700	-20...+70	70 000 / 35 000	117 500	③			
3414 N	84	49.4	24	18...28	32	4.7	■	2.1	2 700	-20...+70	70 000 / 35 000	117 500	③			
3414 NGH	94	55.3	24	18...26	36	5.0	■	3.0	3 000	-20...+70	70 000 / 35 000	117 500	④			
3414 NH	94	55.3	24	18...26	36	5.0	■	2.3	3 000	-20...+70	70 000 / 35 000	117 500	④			
3414 NGH	102	60.0	24	18...26	39	5.1	■	3.2	3 250	-20...+70	70 000 / 35 000	117 500	⑤			
3414 NGH-389	102	60.0	24	18...28	39	5.1	■	3.2	3 250	-20...+70	70 000 / 35 000	117 500	⑤			
3414 NHH	102	60.0	24	18...26	39	5.1	■	3.1	3 250	-20...+70	70 000 / 35 000	117 500	⑤			
3414 NHH-386	102	60.0	24	18...28	39	5.1	■	3.2	3 250	-20...+70	70 000 / 35 000	117 500	⑤			
3418 N	84	49.4	48	36...56	32	4.7	■	2.4	2 700	-20...+70	70 000 / 35 000	117 500	③			

Other 48 VDC models on request.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.

The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. **84** m³/h

DC axial fans

□ 92 x 25 mm

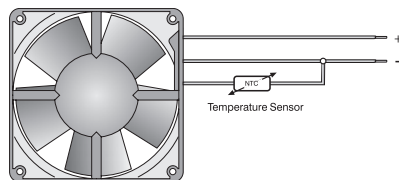
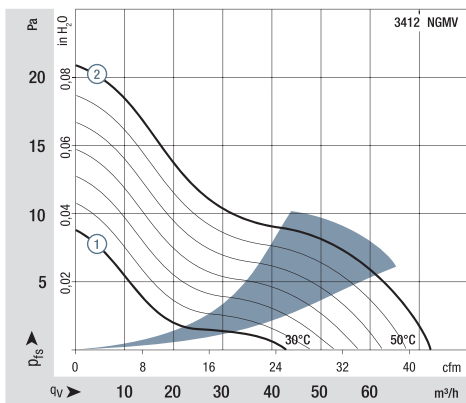


- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** Via single wires AWG 24,
TR 64
- **Highlights:** Automatic speed adjustment
with temperature sensor
- **Weight:** 100 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - External temperature sensor
 - Internal temperature sensor
 - Moisture protection

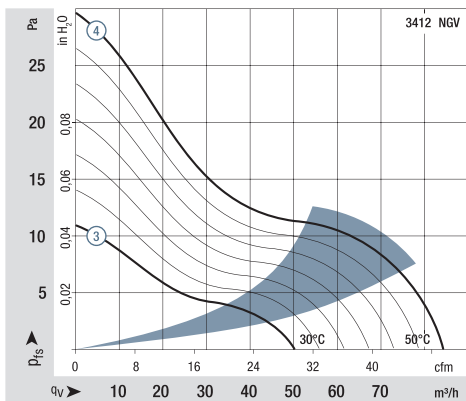
1) Fiberglass-reinforced plastic

Series 3400 N VARIOFAN		Air flow		Nominal voltage		Voltage range		Sound pressure level		Sound power level		Sintec sleeve bearings Ball bearings		Power consumption		Nominal speed		Temperature range		Service life L ₁₀ (40 °C) ebm-papst standard		Service life L ₁₀ (T _{max}) ebm-papst standard		Life expectancy L ₁₀ (PC (40 °C) see page 17		Curve	
		Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	 / 	Watts	rpm ⁻¹	°C	Hours	Hours													
30°C  50°C	3412 NGMV	44	25.9	12	8...14	14	3.5		1.5	1 400	-20...+65	75 000 / 42 500	127 500														
		72	42.4			28	4.3		2.0	2 300																	
30°C  50°C	3412 NGV	50	29.4	12	8...12.6	16	3.7		1.6	1 600	-20...+65	75 000 / 42 500	127 500														
		84	49.4			32	4.7		2.5	2 700																	

Subject to change



The temperature sensor for controlling the motor speed is not included in the scope of delivery.
For the temperature sensor LZ 370, see accessories.

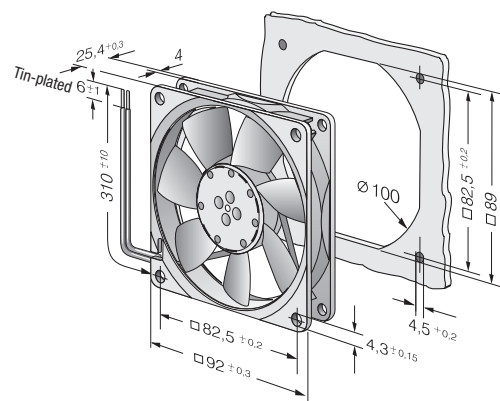


Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance
from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see
http://www.ebmpapst.com/general_conditions



Max. 133 m³/h

DC axial fans

□ 92 x 32 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** Via single wires
AWG 24 UL 1061,
TR 64
 - **Weight:** 190 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

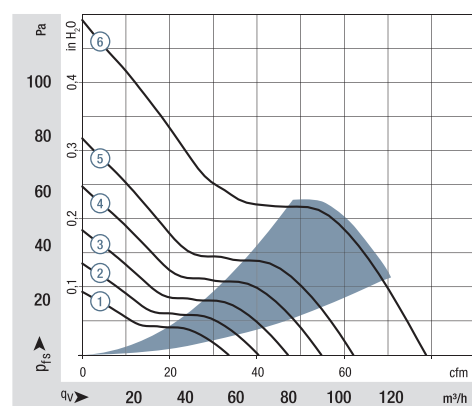
1) Fiberglass-reinforced plastic

Series 3300 N

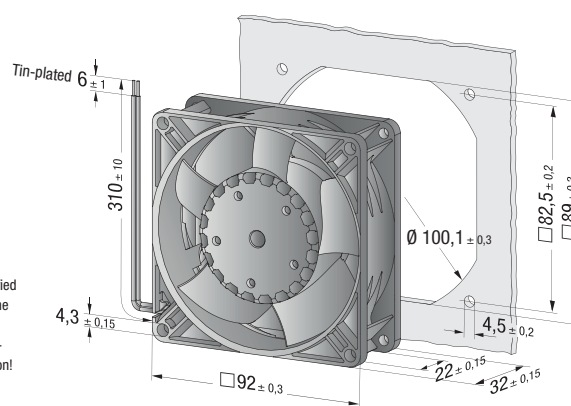
Nominal data

Series 3300 N														
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
3312 NL	56	33	12	6...15	24	4.1	■	0.8	1 850	-20...+75	80 000 / 35 000		135 000	①
3312 NM	68	40	12	6...15	29	4.5	■	1.3	2 250	-20...+75	70 000 / 30 000		117 500	②
3312 NN	80	47	12	6...15	35	4.7	■	1.8	2 650	-20...+75	70 000 / 30 000		117 500	③
3312 NH	93	54	12	6...15	38	5.1	■	2.8	3 050	-20...+75	65 000 / 27 500		110 000	④
3312 NHH	107	63	12	6...15	42	5.4	■	3.4	3 450	-20...+75	57 500 / 25 000		97 500	⑤
3312 NH3	133	78	12	6...14	50	6.0	■	6.7	4 350	-20...+70	50 000 / 25 000		85 000	⑥
3314 NN	80	47	24	18...28	35	4.7	■	1.8	2 650	-20...+75	70 000 / 30 000		117 500	③
3314 NH	93	54	24	18...28	38	5.1	■	2.6	3 050	-20...+75	65 000 / 27 500		110 000	④
3314 NHH	107	63	24	18...28	42	5.4	■	3.5	3 450	-20...+75	57 500 / 25 000		97 500	⑤
3314 NH3	133	78	24	18...28	50	6.0	■	6.7	4 350	-20...+75	50 000 / 22 500		85 000	⑥
3318 NN	80	47	48	36...60	35	4.7	■	1.8	2 650	-20...+75	70 000 / 30 000		117 500	③
3318 NH	93	54	48	36...60	38	5.1	■	3.5	3 050	-20...+75	65 000 / 27 500		110 000	④
3318 NH3	133	78	48	36...58	50	6.0	■	6.5	4 350	-20...+75	50 000 / 22 500		85 000	⑥

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 280 m³/h

DC axial fans

□ 92 x 38 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 24 (H3 and H4: AWG 22), TR 64
- **Weight:** 240 g (H3 and H4: 280 g)
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 3200 J

Nominal data

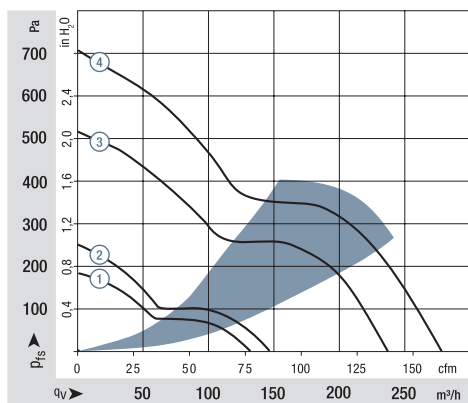
Series 3200 J																
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve		
	Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	 	Watts	rpm ⁻¹	°C	Hours	Hours			
3212 JN	130	76.5	12	7...13.8	51	6.1	 	7.5	6 000	-20 ...+70	70 000 / 35 000	117 500	①			
3212 JH	146	86.0	12	7...15	55	6.4	 	9.0	6 800	-20 ...+70	70 000 / 35 000	117 500	②			
3212 JH3 <i>S-Force</i>	237	139.5	12	6...13.8	69	7.8	 	31.0*	11 000	-20 ...+70	65 000 / 32 500	110 000	③			
3212 JH4 <i>S-Force</i>	280	164.8	12	6...13.8	73	8.2	 	50.0*	13 000	-20 ...+70	60 000 / 30 000	110 000	④			
3214 JN	130	76.5	24	11...28	51	6.1	 	6.5	6 000	-20 ...+70	70 000 / 35 000	117 500	①			
3214 JH	146	86.0	24	12...30	55	6.4	 	9.0	6 800	-20 ...+70	70 000 / 35 000	117 500	②			
3214 JH3 <i>S-Force</i>	237	139.5	24	12...27.6	69	7.8	 	30.0*	11 000	-20 ...+70	65 000 / 32 500	110 000	③			
3214 JH4 <i>S-Force</i>	280	164.8	24	12...27.6	73	8.2	 	50.0*	13 000	-20 ...+70	60 000 / 30 000	110 000	④			
3218 JN	130	76.5	48	36...56	51	6.1	 	7.0	6 000	-20 ...+70	70 000 / 35 000	117 500	①			
3218 JH	146	86.0	48	36...53	55	6.4	 	9.5	6 800	-20 ...+70	70 000 / 35 000	117 500	②			
3218 JH3 <i>S-Force</i>	237	139.5	48	20...58.0	69	7.8	 	29.0*	11 000	-20 ...+70	65 000 / 32 500	110 000	③			
3218 JH4 <i>S-Force</i>	280	164.8	48	20...58.0	73	8.2	 	50.0*	13 000	-20 ...+70	60 000 / 30 000	110 000	④			

Subject to change

3200 JH3 and JH4 also available as standard with PWM control input and speed signal.

Speed control range from 2000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



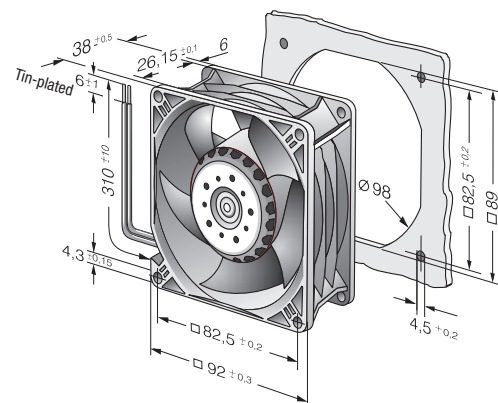
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 270 m³/h
S-Panther

DC axial fans

□ 92 x 38 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Weight:** 240 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 3250 J

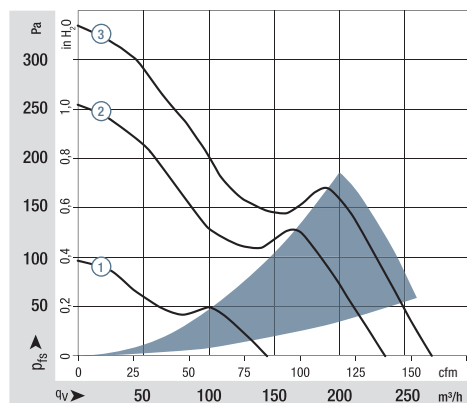
Nominal data

Series 3250 J											Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range				
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	 	Watts	rpm ⁻¹	°C	Hours	Hours		
3252 J/2 H3P	270	158	12	7...13.2	64	7.6		35.0	7 450	-20...+70	85 000 / 42 500	142 500	③	
3254 J/2 H3P	270	158	24	14...26.4	64	7.6		35.0	7 450	-20...+70	85 000 / 42 500	142 500	③	
3258 J/2 HP**	145	85	48	36...56.0	46	5.8		7.0	4 100	-20...+70	100 000 / 50 000	170 000	①	
3258 J/2 HHP	235	138	48	36...56.0	59	7.0		24.3	6 650	-20...+70	90 000 / 45 000	152 500	②	
3258 J/2 H3P	270	158	48	36...56.0	64	7.6		33.6	7 450	-20...+70	85 000 / 42 500	142 500	③	

Subject to change

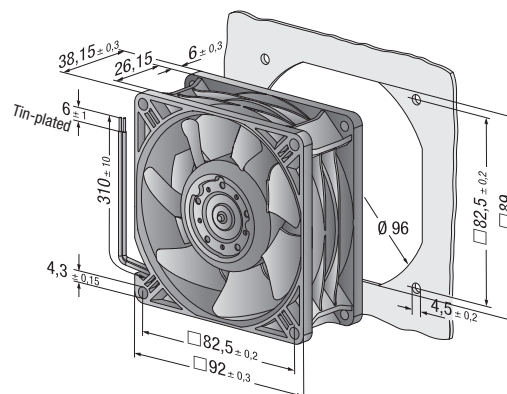
** On request

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 170 m³/h

DC axial fans

□ 119 x 25 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 24, TR 64
 - **Highlights:** Ball bearings and sleeve bearings available
 - **Weight:** 175 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

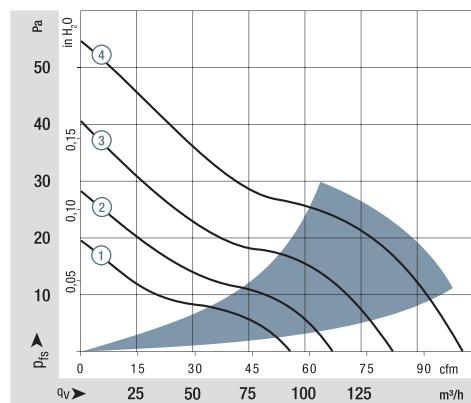
1) Fiberglass-reinforced plastic

Series 4400 F

Nominal data

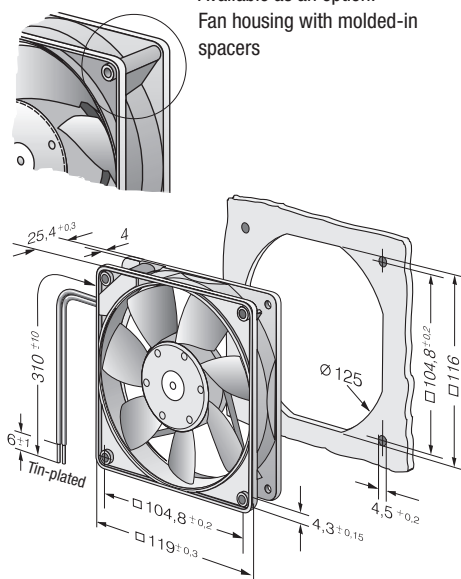
Series 4400 F																Curve
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17			
	Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	 	Watts	rpm ⁻¹	°C	Hours	Hours			
4412 FGL	94	55	12	7...14	26	3.9		1.3	1 600	-20...+75	80 000 / 32 500	135 000	①			
4412 FGML	114	67	12	7...12.6	32	4.3		2.0	1 950	-20...+75	75 000 / 30 000	127 500	②			
4412 FML	114	67	12	7...12.6	32	4.3		2.0	1 950	-20...+75	75 000 / 30 000	127 500	②			
4412 FGM	140	82	12	7...12.6	38	4.8		3.2	2 400	-20...+75	70 000 / 27 500	117 500	③			
4412 FM	140	82	12	7...12.6	38	4.8		3.2	2 400	-20...+75	70 000 / 27 500	117 500	③			
4412 FG	170	100	12	8...12.6	43	5.3		5.3	2 900	-20...+60	60 000 / 37 500	102 500	④			
4412 F	170	100	12	8...12.6	43	5.3		5.3	2 900	-20...+60	60 000 / 37 500	102 500	④			
4414 FL	94	55	24	18...28	26	3.9		1.2	1 600	-20...+75	80 000 / 32 500	135 000	①			
4414 FM	140	82	24	12...28	38	4.8		3.1	2 400	-20...+75	70 000 / 27 500	117 500	③			
4414 FG	170	100	24	12...28	43	5.3		5.0	2 900	-20...+60	60 000 / 37 500	102 500	④			
4414 F	170	100	24	12...28	43	5.3		5.0	2 900	-20...+60	60 000 / 37 500	102 500	④			
4418 FG	170	100	48	28...53	43	5.3		5.4	2 900	-20...+60	60 000 / 37 500	102 500	④			
4418 F	170	100	48	28...53	43	5.3		5.4	2 900	-20...+60	60 000 / 37 500	102 500	④			

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>

Available as an option:
Fan housing with molded-in spacers



Max. 170 m³/h

DC axial fans

Ø 127 mm

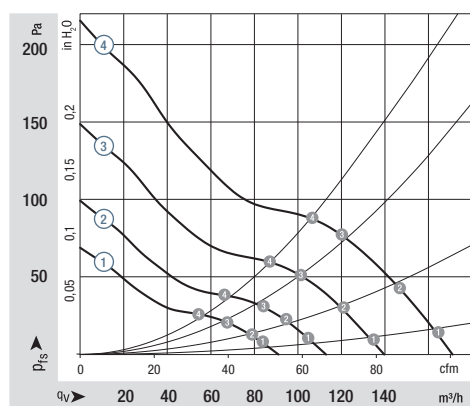


- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 24, TR 64
- **Highlights:** Ball bearings and sleeve bearings available
Optional:
- Reversible direction of rotation
- Symmetrical impeller
- **Weight:** 170 g
- **Possible special versions:** (See chapter DC fans - specials)
- Speed signal
- Go / NoGo alarm
- External temperature sensor
- Internal temperature sensor
- PWM control input
- Analog control input
- Moisture protection
- Reversible direction of rotation
- Symmetrical impeller

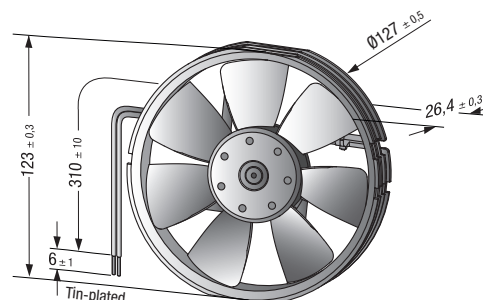
1) Fiberglass-reinforced plastic

Series 4400 F												Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range				
Type		m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
NEW 4412 FGL-573		91	54	12	7...15	26	3.9	■	1.2	1 600	-20...+75	80 000 / 32 500	135 000	①	
NEW 4412 FGML*		114	67	12	7...12.6	32	4.3	■	2.0	1 950	-20...+75	75 000 / 30 000	127 500	③	
NEW 4412 FGM*		140	82	12	7...12.6	38	4.8	■	3.2	2 400	-20...+75	75 000 / 27 500	117 500	③	
NEW 4412 FG*		170	100	12	8...12.6	43	5.3	■	5.3	2 900	-20...+60	60 000 / 37 500	102 500	④	
Subject to change															
* On request		Other voltage versions (24 VDC, 48 VDC), speed variations and ball bearing designs are available as additional variants.													

	n rpm ⁻¹	P _{ed} W	L _{WA} dB(A)		n rpm ⁻¹	P _{ed} W	L _{WA} dB(A)
① ①	1515	1	44	③ ①	2225	4	51
① ②	1516	1	38	③ ②	2235	4	50
① ③	1547	1	40	③ ③	2304	4	51
① ④	1567	1	39	③ ④	2369	4	52
② ①	1856	2	50	④ ①	2670	6	59
② ②	1848	2	44	④ ②	2685	6	59
② ③	1882	2	44	④ ③	2783	6	56
② ④	1929	2	46	④ ④	2869	6	57



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 225 m³/h

DC axial fans

□ 119 x 25 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Weight:** 240 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

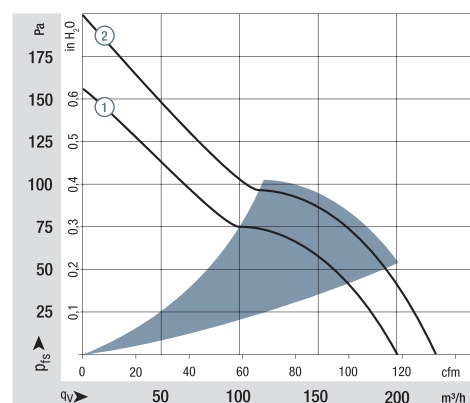
1) Fiberglass-reinforced plastic

Series 4400 FN

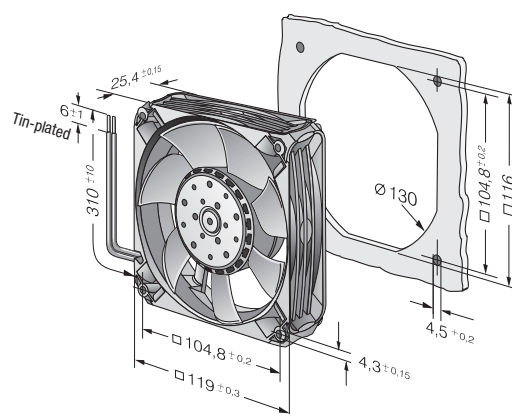
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
4412 FNH	225	132	12	9...13.2	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	102 500	102 500	②
4414 FNN	200	118	24	14...28	52	6.5	■	8.3	4 850	-20...+70	60 000 / 30 000	102 500	102 500	①
4414 FNH	225	132	24	18...26.4	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	102 500	102 500	②
4418 FNH	225	132	48	36...53	55	6.7	■	12	5 400	-20...+70	60 000 / 30 000	102 500	102 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 204 m³/h

DC axial fans

□ 119 x 32 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** Via single wires AWG 22,
TR 64
- **Highlights:** Ball bearings and sleeve
bearings available
- **Weight:** 220 g

- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

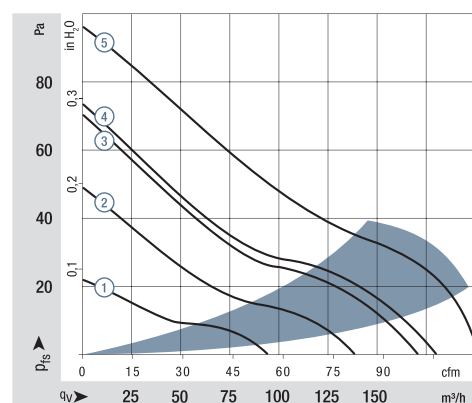
1) Fiberglass-reinforced plastic

Series 4300

Nominal data

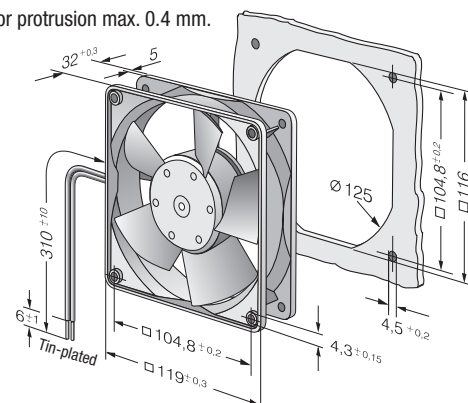
Series 4300																
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ QPC (40 °C) see page 17	Curve		
	Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours			
4312 GL	95	56	12	6...15	30	4.3	■	1.2	1 550	-20...+75	80 000 / 35 000	135 000	①			
4312 L	95	56	12	6...15	30	4.3	■	1.2	1 550	-20...+75	80 000 / 35 000	135 000	①			
4312 GM	140	82	12	6...15	39	5.3	■	3.1	2 300	-20...+75	70 000 / 30 000	117 500	②			
4312 M	140	82	12	6...15	39	5.3	■	3.1	2 300	-20...+75	70 000 / 30 000	117 500	②			
4312 G	170	100	12	6...15	45	5.8	■	5.0	2 800	-20...+70	62 500 / 30 000	105 000	③			
4312	170	100	12	6...15	45	5.8	■	5.0	2 800	-20...+70	62 500 / 30 000	105 000	③			
4312-179	204	120	12	6...13.2	51	6.4	■	9.4	3 400	-20...+65	47 500 / 27 500	80 000	⑤			
4314 L	95	56	24	12...28	30	4.3	■	1.2	1 550	-20...+75	80 000 / 35 000	135 000	①			
4314 M	140	82	24	12...28	39	5.3	■	2.8	2 300	-20...+75	70 000 / 30 000	117 500	②			
4314 G	170	100	24	12...28	45	5.8	■	4.7	2 800	-20...+75	62 500 / 27 500	105 000	③			
4314	170	100	24	12...28	45	5.8	■	5.0	2 800	-20...+75	62 500 / 27 500	105 000	③			
4314-147	180	106	24	12...28	47	6.1	■	4.7	3 000	-20...+75	57 500 / 25 000	80 000	④			
4314-180	204	120	24	12...26	51	6.4	■	8.5	3 400	-20...+70	45 000 / 22 500	75 000	⑤			
4318 M	140	82	48	36...56	39	5.3	■	3.6	2 300	-20...+75	70 000 / 30 000	117 500	②			
4318	170	100	48	36...53	45	5.8	■	5.1	2 800	-20...+75	62 500 / 27 500	105 000	③			

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>

Rotor protrusion max. 0.4 mm.



DC axial fans

□ 119 x 32 mm

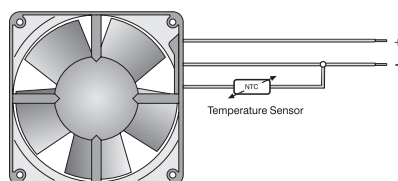
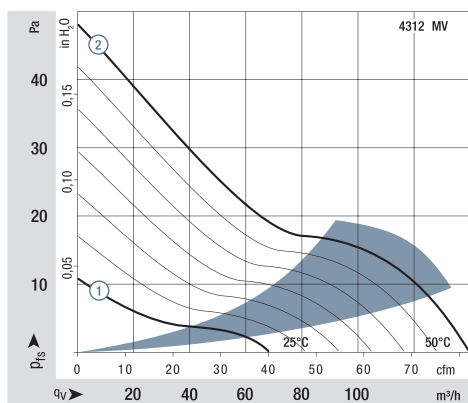


- | | |
|--|---|
| <ul style="list-style-type: none"> – Material: Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA) – Direction of air flow: Exhaust over struts – Direction of rotation: Clockwise,
looking towards rotor – Connection: Via single wires AWG 22,
TR 64 – Highlights: Speed automatically adjusted
to cooling requirement – Weight: 220 g | <ul style="list-style-type: none"> – Possible special versions:
(See chapter DC fans - specials) - Speed signal - Go / NoGo alarm - Alarm with speed limit - External temperature sensor - Internal temperature sensor - PWM control input - Analog control input - Moisture protection |
|--|---|

1) Fiberglass-reinforced plastic

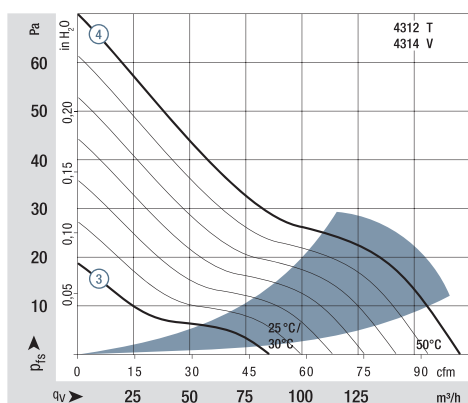
Series 4300 VARIOFAN														
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
4312 MT	65	38	12	8...15	25	3.9	■	1.1	1 100	-20...+65	70 000 / 40 000	117 500	①	
	138	81			39	5.3		3.3	2 300				②	
4312 T	85	50	12	8...13.2	29	4.2	■	1.7	1 400	-20...+65	65 000 / 35 000	110 000	③	
	170	100			45	5.8		5.0	2 800				④	
4314 T	85	50	24	18...32	29	4.2	■	1.6	1 400	-20...+65	65 000 / 35 000	110 000	③	
	170	100			45	5.8		4.8	2 800				④	

Subject to change

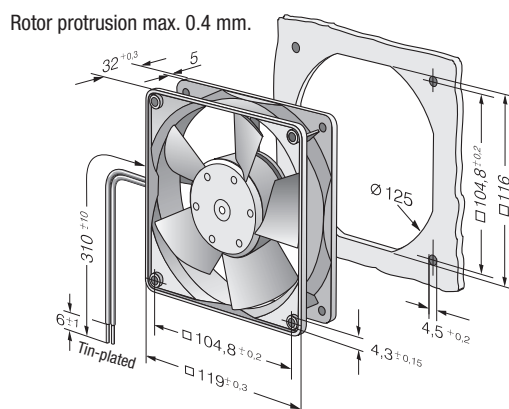


The temperature sensor for controlling the motor speed is not included in the scope of delivery.

For the temperature sensor LZ 370,
see accessories.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from
fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
http://www.ebmpapst.com/general_conditions



Max. 205 m³/h

DC axial fans

□ 119 x 38 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** Via single wires AWG 24,
TR 64
- **Weight:** 270 g

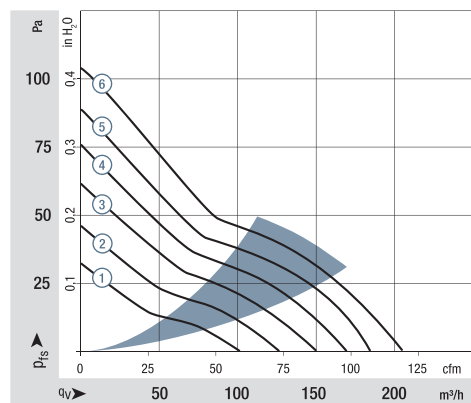
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

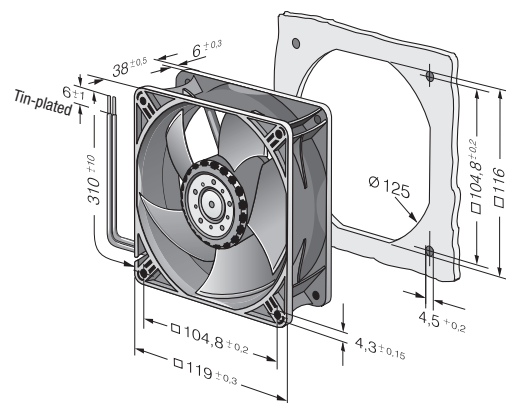
Series 4400														
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
4412 L	150	88	12	7...14	37	5.0	■	2.2	2 700	-20...+80	67 500 / 22 500	115 000	115 000	③
4412 ML	168	99	12	7...15	40	5.1	■	3.0	3 000	-20...+80	67 500 / 22 500	115 000	115 000	④
4412 M	184	108	12	7...14	42	5.3	■	3.8	3 300	-20...+75	65 000 / 25 000	110 000	110 000	⑤
4412 N	205	121	12	7...14	46	5.6	■	5.3	3 650	-20...+70	62 500 / 30 000	105 000	105 000	⑥
4414 L3	100	59	24	12...28	26	4.0	■	1.0	1 800	-20...+80	75 500 / 22 500	127 500	127 500	①
4414 LL	124	73	24	12...28	33	4.5	■	1.6	2 250	-20...+80	70 000 / 22 500	117 500	117 500	②
4414 L	150	88	24	18...28	37	5.0	■	2.4	2 700	-20...+80	67 500 / 22 500	115 000	115 000	③
4414 ML	168	99	24	12...28	40	5.1	■	3.2	3 000	-20...+80	67 500 / 22 500	115 000	115 000	④
4414 M	184	108	24	18...28	42	5.3	■	4.1	3 300	-20...+75	65 000 / 25 000	110 000	110 000	⑤
4414 N	205	121	24	18...28	46	5.6	■	5.4	3 650	-20...+70	62 500 / 30 000	105 000	105 000	⑥
4418 L	150	88	48	36...60	37	5.0	■	2.5	2 700	-20...+75	67 500 / 27 500	115 000	115 000	③
4418 ML	168	99	48	36...60	40	5.1	■	3.2	3 000	-20...+75	67 500 / 27 500	115 000	115 000	④
4418 M	184	108	48	36...60	42	5.3	■	4.2	3 300	-20...+70	65 000 / 32 500	110 000	110 000	⑤
4418 N	205	121	48	36...60	46	5.6	■	5.4	3 650	-20...+70	62 500 / 30 000	105 000	105 000	⑥
Subject to change														

Subject to change

Further variants can be found on page 59.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 285 m³/h

DC axial fans

□ 119 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** Via single wires AWG 24, TR 64
 - **Weight:** 270 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54

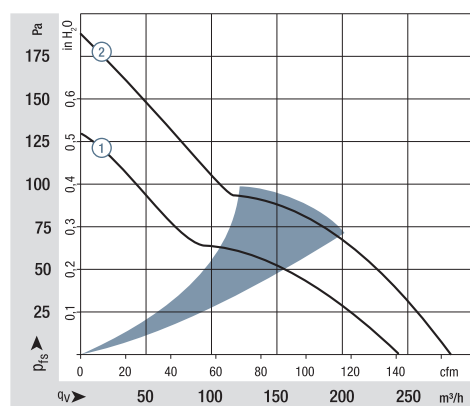
1) Fiberglass-reinforced plastic

Series 4400

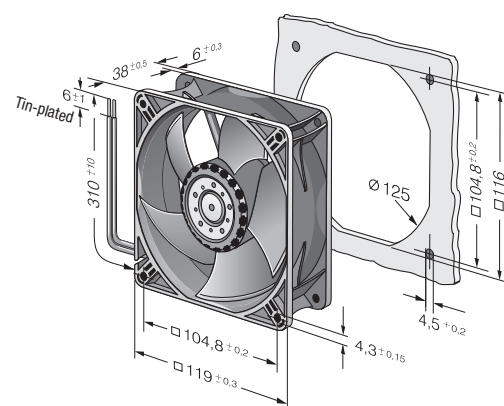
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
4412 H	240	141	12	7...14	50	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	97 500	97 500	①
4412/2 HHP	285	168	12	7...14.5	55	6.4	■	13.0	5 000	-20...+70	50 000 / 25 000	85 000	85 000	②
4414 H	240	141	24	18...28	50	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	97 500	97 500	①
4414 HH	285	165	24	16...28	55	6.4	■	14.0	5 000	-20...+70	50 000 / 25 000	85 000	85 000	②
4414/2 HHP	285	168	24	18...28	55	6.4	■	12.0	5 000	-20...+70	50 000 / 25 000	85 000	85 000	②
4418 H	240	141	48	36...60	50	6.0	■	8.6	4 300	-20...+70	57 500 / 27 500	97 500	97 500	①
4418/2 HHP	285	168	48	36...60	55	6.4	■	13.0	5 000	-20...+70	50 000 / 25 000	85 000	85 000	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 237 m³/h

DC axial fans

□ 119 x 38 mm

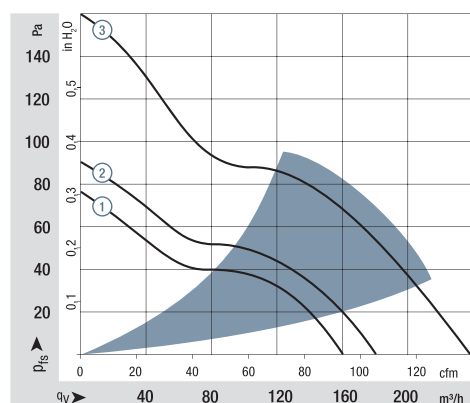


- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** On flat connectors, 2.8 x 0.5 mm
Also available with wires as an option
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 390 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

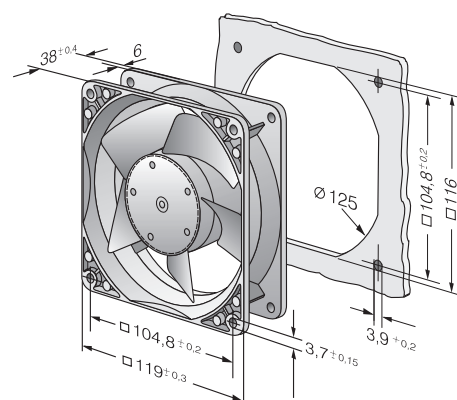
1) Fiberglass-reinforced plastic

Series 4100 N														
Nominal data	Air flow		Nominal voltage	Voltage range	Sound pressure level		Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
	m ³ /h	cfm			dB(A)	Bel(A)								
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	Curve
4182 NGX	160	94	12	6...15	44	5.3	□	3.7	2 800	-20...+75	85 000 / 37 500	142 500	142 500	①
4182 NX	180	106	12	6...15	49	5.7	■	4.9	3 200	-30...+75	85 000 / 37 500	142 500	142 500	②
4182 NXH	237	140	12	7...14	57	6.5	■	11.0	4 400	-30...+55	70 000 / 50 000	117 500	117 500	③
4184 NGX	160	94	24	12...31.5	44	5.3	□	3.3	2 800	-20...+75	85 000 / 37 500	142 500	142 500	①
4184 NXM	160	94	24	12...31.5	44	5.3	■	3.2	2 800	-30...+75	85 000 / 37 500	142 500	142 500	①
4184 NX	180	106	24	12...31.5	49	5.7	■	4.9	3 200	-30...+70	85 000 / 42 500	142 500	142 500	②
4184 NXH	237	140	24	12...28	57	6.5	■	11.0	4 400	-30...+70	70 000 / 35 000	117 500	117 500	③
4188 NGX	160	94	48	36...60	44	5.3	□	3.6	2 800	-20...+75	85 000 / 37 500	142 500	142 500	①
4188 NXM	160	94	48	36...60	44	5.3	■	3.5	2 800	-30...+75	85 000 / 37 500	142 500	142 500	①

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 440 m³/h

DC axial fans

□ 119 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires
AWG 22 UL 1007, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 390 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 4100 N
High Performance

Nominal data

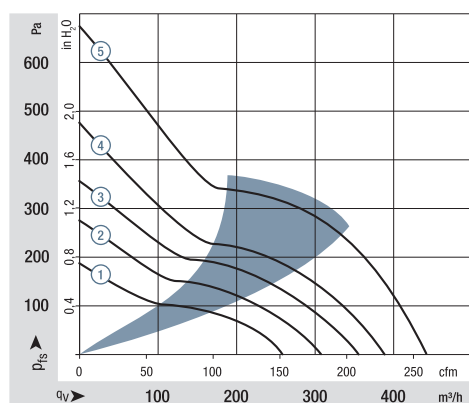
	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C)	Service life L ₁₀ (T _{max})	Life expectancy L ₁₀ IPC	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
4112 NHH	260	153	12	9...15	60	6.8	■	13.3	5 000	-20...+65	70 000 / 55 000	117 500	117 500	①
4112 NH3	310	182	12	9...15	65	7.2	■	21.6	6 000	-20...+65	65 000 / 37 500	110 000	110 000	②
4112 NH4	355	209	12	9...14	67	7.4	■	32.0	6 800	-20...+65	62 500 / 35 000	105 000	105 000	③
4114 NHH	260	153	24	16...30	60	6.8	■	12.4	5 000	-20...+65	70 000 / 52 500	117 500	117 500	①
4114 NH3	310	182	24	16...30	65	7.2	■	19.5	6 000	-20...+65	65 000 / 37 500	110 000	110 000	②
4114 NH4	355	209	24	16...30	67	7.4	■	30.0	6 800	-20...+65	62 500 / 35 000	105 000	105 000	③
4114 NH5 <i>S-Force</i>	390	230	24	16...30	70	7.6	■	45.0*	7 500	-20...+65	62 500 / 35 000	105 000	105 000	④
4114 NH6 <i>S-Force</i>	440	259	24	16...30	73	8.1	■	65.0*	8 400	-20...+65	60 000 / 32 500	102 500	102 500	⑤
4118 NHH	260	153	48	36...60	60	6.8	■	12.0	5 000	-20...+65	70 000 / 52 500	117 500	117 500	①
4118 NH3	310	182	48	36...60	65	7.2	■	20.0	6 000	-20...+65	65 000 / 37 500	110 000	110 000	②
4118 NH4	355	209	48	36...60	67	7.4	■	28.0	6 800	-20...+65	62 500 / 35 000	105 000	105 000	③
4118 NH5 <i>S-Force</i>	390	230	48	36...60	70	7.6	■	45.0*	7 500	-20...+65	62 500 / 35 000	105 000	105 000	④
4118 NH6 <i>S-Force</i>	440	259	48	36...60	73	8.1	■	62.0*	8 400	-20...+65	60 000 / 32 500	102 500	102 500	⑤

Subject to change

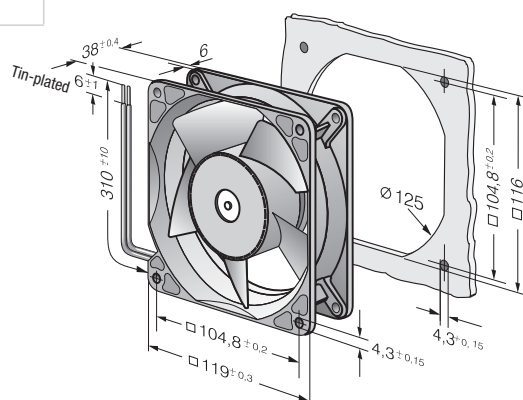
* Power consumption at free air flow. These values can be significantly higher in the operating point.

* Power consumption – in operation

Fan type	optimum operating range (W)
4114 NH5	55
4114 NH6	95
4118 NH5	55
4118 NH6	95



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 570 m³/h
S-Force

DC axial fans

□ 119 x 38 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 425 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input (standard)
 - Analog control input
 - Moisture protection
 - Salt spray protection

1) Fiberglass-reinforced plastic

Series 4100 N
High Performance

Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption**	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
4114 N/2 H7P	500	294	24	16...30	76	8.5	■	90	9 500	-20...+75	57 500 / 25 000	97 500	97 500	①
4114 N/2 H8P	570	336	24	16...30	78	8.9	■	120	11 000	-20...+75	55 000 / 22 500	92 500	92 500	②
4118 N/2 H7P	500	294	48	36...60*	76	8.5	■	90	9 500	-20...+75	57 500 / 25 000	97 500	97 500	①
4118 N/2 H8P	570	336	48	36...60*	78	8.9	■	120	11 000	-20...+75	55 000 / 22 500	92 500	92 500	②

Subject to change

* 36...72 VDC on request.

Speed control range from 500 rpm⁻¹ up to maximum nominal speed.

Standstill at 0% PWM, maximum speed if control cable is interrupted.

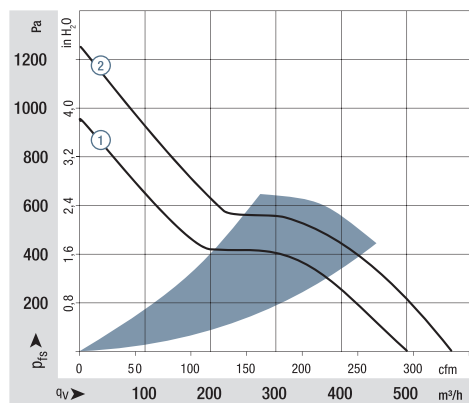
To attain the specified service life, an external capacitor must be wired

between the plus and minus strands. Please note the wiring suggestion on page 16.

** Power consumption at free air flow, these values can be significantly higher in the operating point.

** Power consumption - in operation

Fan type	optimum operating range (W)
4114 NH7P	100
4114 NH8P	160
4118 NH7P	100
4118 NH8P	160



Air performance measured according to: ISO 5801.

Installation category A, without contact protection.

Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.

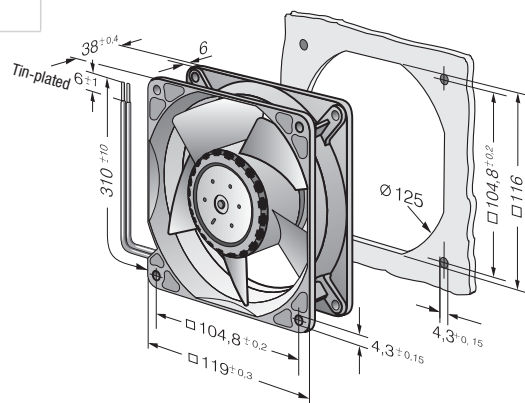
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 280 m³/h

DC diagonal fan

□ 119 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: GRP¹⁾ (PBT)
Available in die-cast aluminum
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 375 g (with metal housing: 455 g)
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

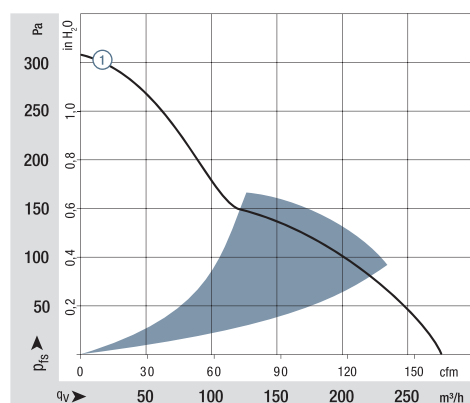
Series DV 4100

Nominal data

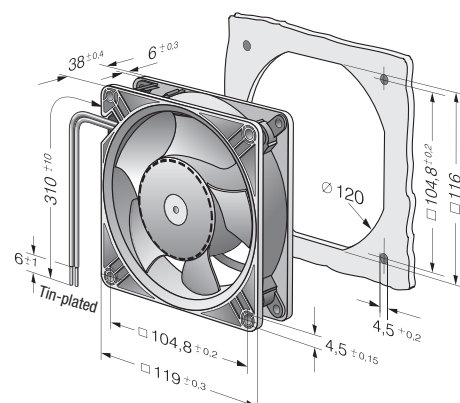
	Air flow		Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
DV 4112 N	280	165	12	9...15	61	6.9	■	21.0	6 000	-20...+65	70 000 / 40 000	117 500	117 500	①
DV 4114 N	280	165	24	16...30	61	6.9	■	20.5	6 000	-20...+65	70 000 / 40 000	117 500	117 500	①
DV 4118 N	280	165	48	36...60	61	6.9	■	20.0	6 000	-20...+65	70 000 / 40 000	117 500	117 500	①

Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 340 m³/h

DC axial fans

□ 127 x 38 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** Via single wires AWG 22,
TR 64
- **Weight:** 310 g

- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 5200 N

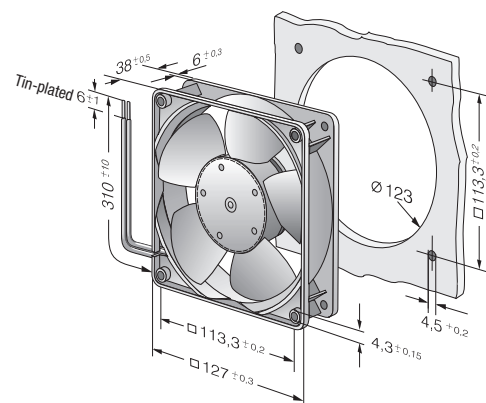
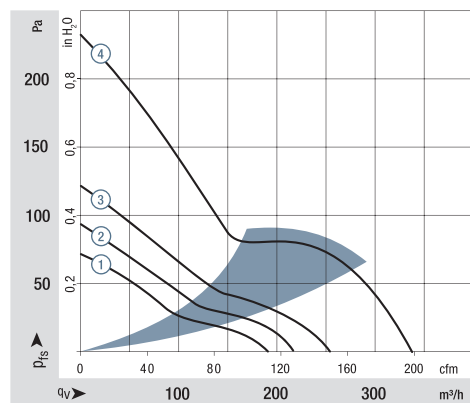
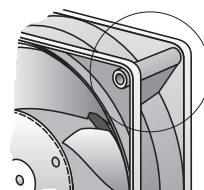
Nominal data

Series 5200 N																
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption**	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve		
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours			
5212 NM	187	110	12	7...14.5	43	5.3	■	4.1	2 750	-20...+75	62 500 / 27 500	105 000	105 000	①		
5212 NN	216	127	12	7...14	46	5.6	■	6.2	3 150	-20...+70	57 500 / 25 000	97 500	97 500	②		
5212 NH	252	148	12	7...14	51	6.0	■	9.8	3 650	-20...+70	45 000 / 22 500	75 000	75 000	③		
5212 NHH*	340	200	12	9...15	58	6.6	■	19.0	4 900	-20...+65	45 000 / 25 000	75 000	75 000	④		
5214 NM	187	110	24	12...28	43	5.3	■	4.6	2 750	-20...+75	62 500 / 27 500	105 000	105 000	①		
5214 NN	216	127	24	12...28	46	5.6	■	6.0	3 150	-20...+75	57 500 / 25 000	97 500	97 500	②		
5214 NH	252	148	24	12...28	51	6.0	■	9.8	3 650	-20...+70	45 000 / 22 500	75 000	75 000	③		
5214 NHH*	340	200	24	16...30	58	6.6	■	17.5	4 900	-20...+65	45 000 / 25 000	75 000	75 000	④		
5218 NM	187	110	48	36...56	43	5.3	■	4.5	2 750	-20...+75	62 500 / 27 500	105 000	105 000	①		
5218 NN	216	127	48	36...56	46	5.6	■	6.2	3 150	-20...+70	57 500 / 32 500	97 500	97 500	②		
5218 NH	252	148	48	36...56	51	6.0	■	9.6	3 650	-20...+55	45 000 / 32 500	75 000	75 000	③		
5218 NHH*	340	200	48	36...60	58	6.6	■	18.0	4 900	-20...+65	45 000 / 25 000	75 000	75 000	④		

Subject to change

** Power consumption at free air flow, these values can be significantly higher in the operating point.

*NHH models: fan housing
with molded-in spacers.



Max. 320 m³/h

DC diagonal fan

□ 127 x 38 mm



- **Material:** Housing: GRP¹⁾ (PBT)
Available in Die-cast aluminum
Metal flange
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 415 g (with metal housing: 490 g)
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series DV 5200

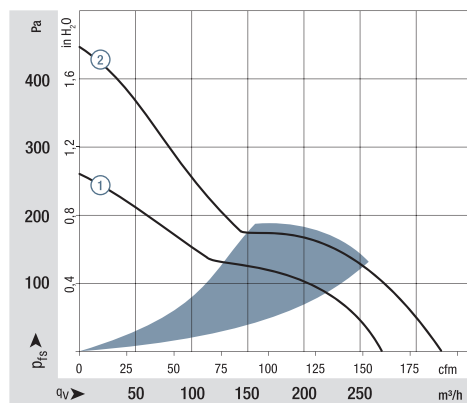
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
DV 5212 N	270	159	12	9...15	56	6.4	■	21.0	5 000	-20...+65	70 000 / 40 000	117 500	117 500	①
DV 5214 N	270	159	24	16...30	56	6.4	■	20.4	5 000	-20...+65	70 000 / 40 000	117 500	117 500	①
DV 5218 N	270	159	48	36...60	56	6.4	■	18.5	5 000	-20...+65	70 000 / 40 000	117 500	117 500	①
Standard model comes with speed signal and PWM control input. Other versions by request.														
DV 5214/2 HP	320	188	24	16...30	62	7.2	■	38.5	6 000	-20...+65	62 500 / 35 000	105 000	105 000	②

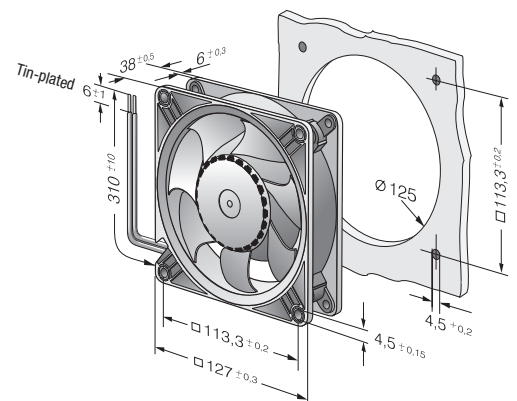
Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.
Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 260 m³/h

DC axial fans

□ 135 x 38 mm



- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
48 V design incl. screws.
- **Weight:** 650 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

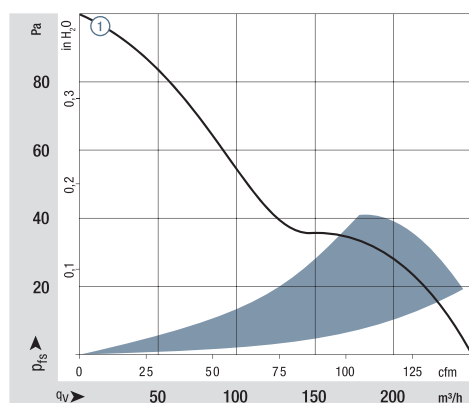
Series 5100 N

Nominal data

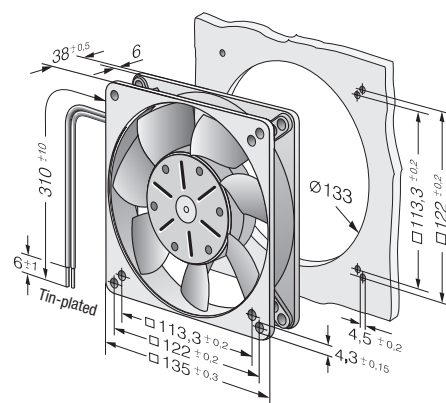
	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
5112 N	260	153	12	6...15	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	135 000	135 000	①
5114 N	260	153	24	12...30	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	135 000	135 000	①
5118 N	260	153	48	24...60	48	6.1	■	9.5	2 900	-25...+72	80 000 / 37 500	135 000	135 000	①

Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 340 m³/h
S-Force

DC axial fans

□ 140 x 51 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Intake over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 900 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 5300

Nominal data

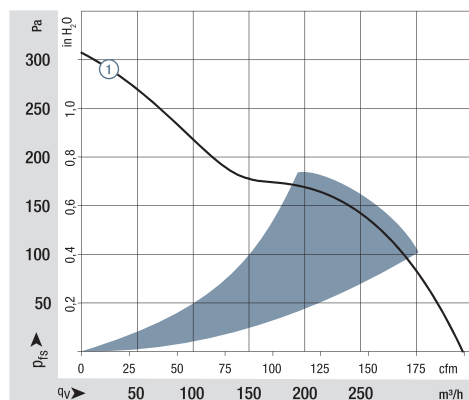
	Air flow		Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	①
5314/2 HP	340	200	24	16...28	64	7.2	■	28.4	5 000	-20...+65	77 500 / 40 000	130 000	130 000	①
5318/2 HP	340	200	48	36...72	64	7.2	■	27	5 000	-20...+65	77 500 / 40 000	130 000	130 000	①

Subject to change

Speed control range from 700 rpm⁻¹ up to maximum nominal speed.

Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



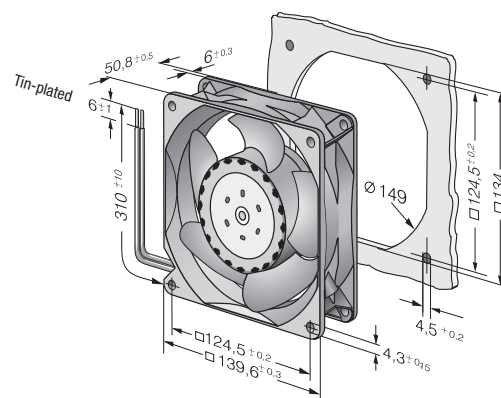
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 670 m³/h
S-Force

DC axial fans

□ 140 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Intake over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 20 and AWG 22, TR 64
 - **Highlights:** 3-phase fan drive with very smooth operation
Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 900 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 5300 TD

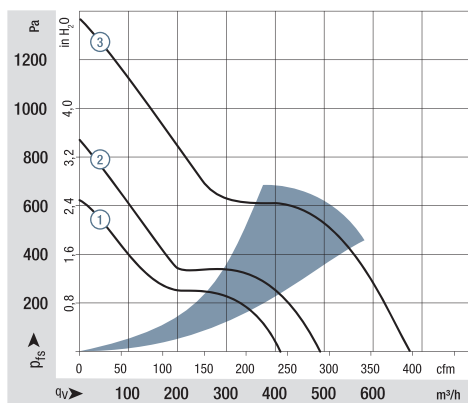
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings	Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■		Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
5312/2 TDHP	410	241	12	8...16	70	7.7	■	■	43	6 000	-20...+70	70 000 / 35 000	117 500	①	
5314/2 TDHP	410	241	24	16...36	70	7.7	■	■	42	6 000	-20...+70	70 000 / 35 000	117 500	①	
5314/2 TDHHP	490	288	24	16...36	75	8.1	■	■	67	7 000	-20...+70	62 500 / 30 000	105 000	②	
5318/2 TDHP	410	241	48	36...72	70	7.7	■	■	42	6 000	-20...+70	70 000 / 35 000	117 500	①	
5318/2 TDHHP	490	288	48	36...72	75	8.1	■	■	66	7 000	-20...+70	62 500 / 30 000	105 000	②	
5318/2 TDH4P	670	394	48	36...72	79	8.8	■	■	149	9 200	-20...+65	57 500 / 32 500	97 500	③	

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.

Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



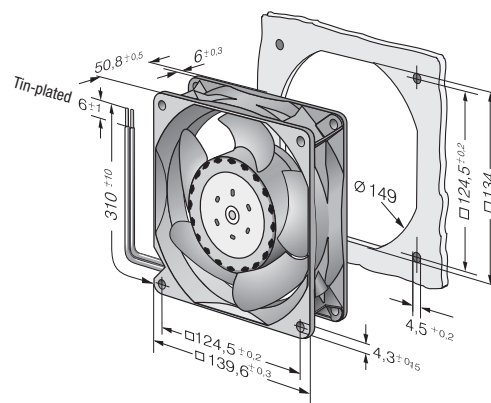
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 360 m³/h

DC axial fans

Ø 150 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 620 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

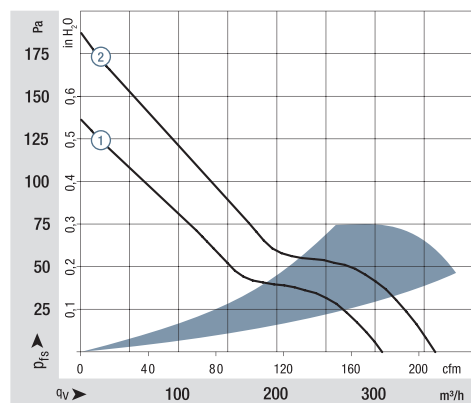
Series 7100 N

Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
7112 N	308	181	12	6...15	53	6.2	■	12.0	2 850	-25...+72	80 000 / 37 500	135 000	135 000	①
7114 N	308	181	24	12...30	53	6.2	■	12.0	2 850	-25...+72	80 000 / 37 500	135 000	135 000	①
7114 NH	360	212	24	12...26.5	58	6.7	■	19.0	3 350	-25...+72	75 000 / 35 000	127 500	127 500	②
7118 N	308	181	48	24...60	53	6.2	■	12.0	2 850	-25...+72	80 000 / 37 500	135 000	135 000	①

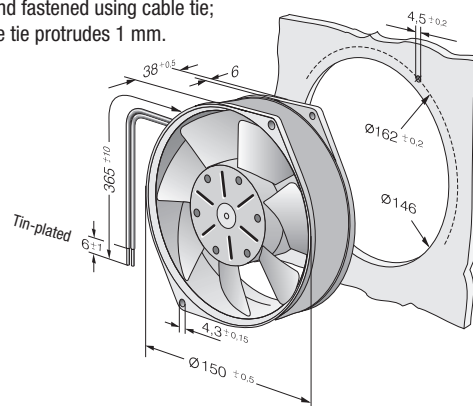
Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>

Wire fastened with cable tie.
Strand fastened using cable tie;
cable tie protrudes 1 mm.



Max. 360 m³/h

DC axial fans

Ø 150 x 55 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 725 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

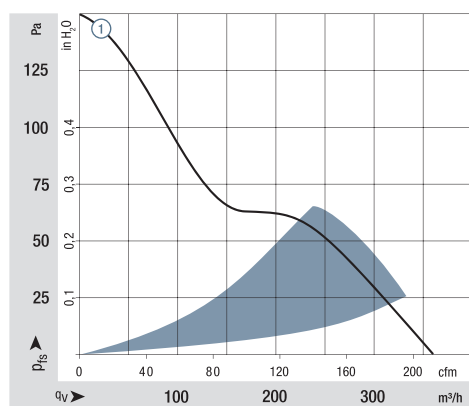
Series 7200 N

Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	①
7212 N	360	212	12	6...15	53	6.2	■	12.0	3 050	-25...+72	80 000 / 37 500	135 000	135 000	①
7214 N	360	212	24	12...30	53	6.2	■	12.0	3 050	-25...+72	80 000 / 37 500	135 000	135 000	①
7218 N	360	212	48	24...60	53	6.2	■	12.0	3 050	-25...+72	80 000 / 37 500	135 000	135 000	①

Subject to change

* Power consumption at free air flow. These values can be significantly higher in the operating point.



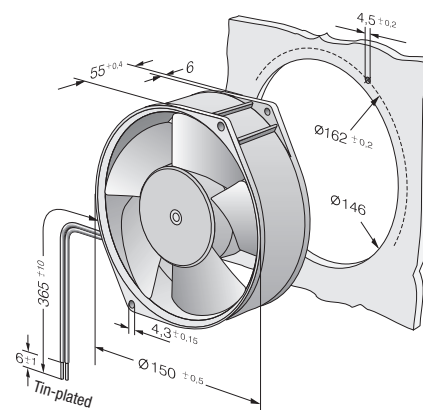
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 480 m³/h

DC axial fans

172 x 150 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** on flat plugs 3 x 0.5 mm
- **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 760 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 6400

Nominal data

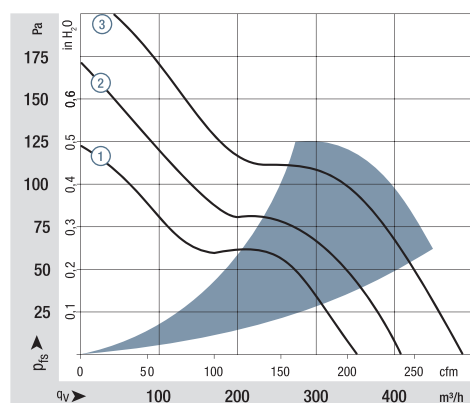
	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings	Ball bearings	Power consumption***	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
6412 M	350	206	12	8...15	52	6.0	■	■	12	2 850	-20...+72	80 000 / 37 500	135 000	①	
6424 M	350	206	24	12...32	52	6.0	■	■	12	2 850	-20...+72	80 000 / 37 500	135 000	①	
6424	410	241	24	12...28	57	6.4	■	■	17	3 400	-20...+72	75 000 / 35 000	127 500	②	
6424 H	480	283	24	12...28	63	7.1	■	■	26	4 000	-20...+55**	70 000 / 50 000	117 500	③	
6448	410	241	48	28...60	57	6.4	■	■	17	3 400	-20...+72	75 000 / 35 000	127 500	②	
6448 H*	480	283	48	28...60	63	7.1	■	■	26	4 000	-20...+55**	70 000 / 50 000	117 500	③	

Subject to change

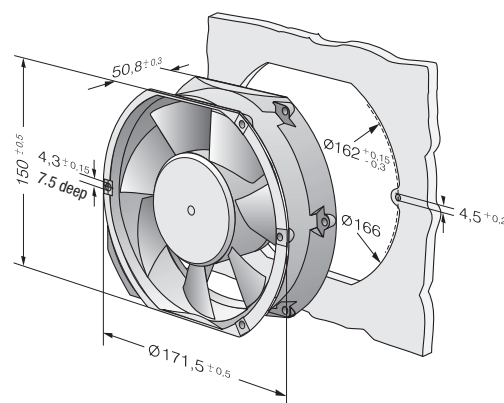
* Strand 310 mm.

** 72 °C versions on request

*** Power consumption at free air flow, these values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 900 m³/h

DC axial fans

172 x 150 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 760 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54
 - Reversible direction of rotation

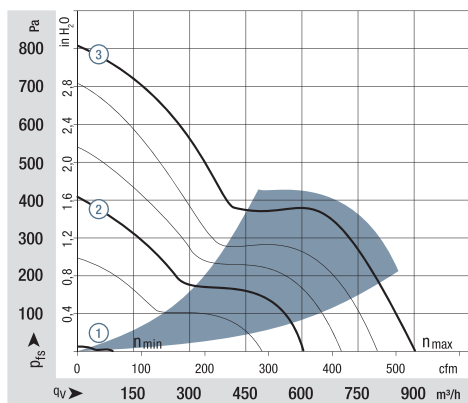
¹⁾ Fiberglass-reinforced plastic

Series 6400 TD															
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption**	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type		m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
Min Max	6424 TD...	90	53	24	16...28	18	—	■	2	800	-20...+60	70 000 / 45 000	117 500	①	
		600	353			65	7.4		50	5 100					②
Min Max	6448 TD...	90	53	48	40...55*	18	—	■	2	800	-20...+60	70 000 / 45 000	117 500	①	
		600	353			65	7.4		50	5 100					②
Min Max	6448 TDHH...	90	53	48	36...72	18	—	■	2	800	-20...+60	70 000 / 45 000	117 500	①	
		900	530			78	8.6		163	7500					③

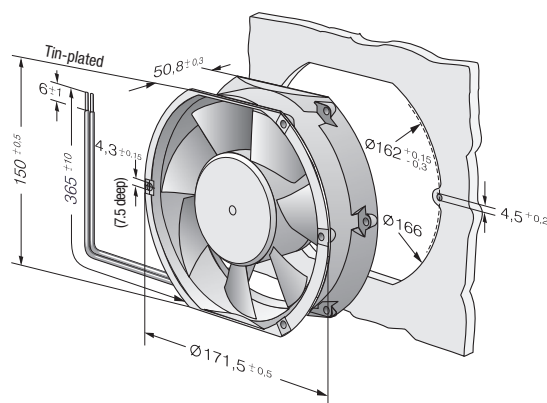
Subject to change

* Variants with an extended voltage range available on request.

Models 6424 TD..., 6448 TD... and 6448 TDHH... are available in customer-specific, custom-developed variants only. The figures indicated are technically feasible benchmark values. The fans can be specially adapted to your application with signal outputs and control inputs. For details of the technical possibilities, refer to the chapters on the sensor signal, alarm signal and control inputs beginning on page 165. ** Power consumption at free air flow, these values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 530 m³/h

DC diagonal fan

172 x 160 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 820 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

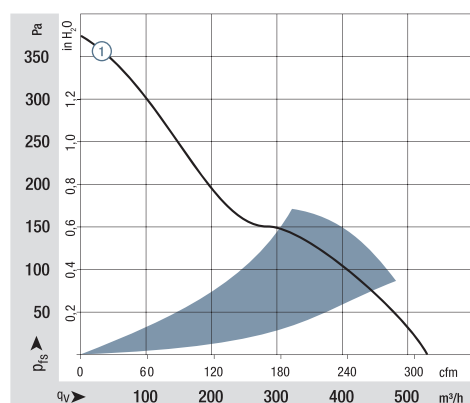
1) Fiberglass-reinforced plastic

Series DV 6400

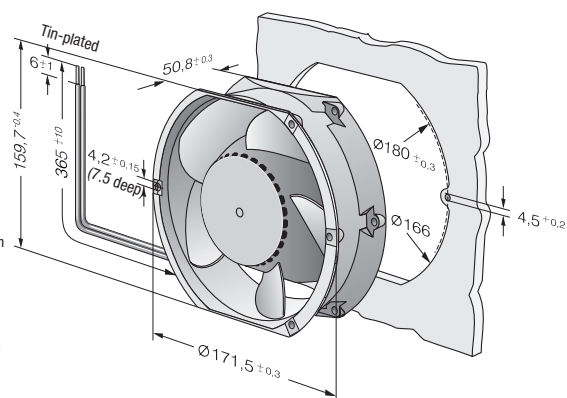
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	①
DV 6424	530	312	24	16...28	65	7.3	■	40	4 300	-20...+75	90 000 / 35 000	152 500	152 500	①
DV 6448	530	312	48	28...60	65	7.3	■	40	4 300	-20...+75	90 000 / 35 000	152 500	152 500	①

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 680 m³/h

DC diagonal fan

172 x 160 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** 3-phase fan drive with very smooth operation and high efficiency. Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 820 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54
 - Reversible direction of rotation

¹⁾ Fiberglass-reinforced plastic

Series DV 6400 TD TURBOFAN

Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
DV 6424 TD	680	400	24	16...28	71	7.9	■	91	5 500	-20...+60	65 000 / 40 000	110 000	110 000	②
Min ▼ Max	100	59	24	16...28	29	—	■	2	800	-20...+60	65 000 / 40 000	110 000	110 000	①
	680	400			71	7.9		91	5 500					②
Min ▼ Max	100	59	48	40...55	29	—	■	2	800	-20...+60	65 000 / 40 000	110 000	110 000	①
	680	400			71	7.9		86	5 500					②

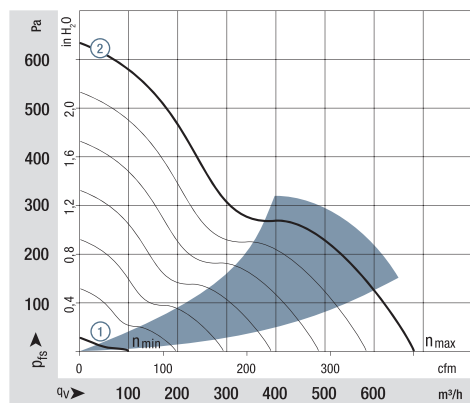
Subject to change

Models DV 6424 TD... and DV 6448 TD... are available in customer-specific, custom-developed variants only.

The figures indicated are technically feasible benchmark values. The fans can be specially adapted to your application with signal outputs and control inputs.

For details of the technical possibilities, refer to the chapters on the sensor signal, alarm signal and control inputs beginning on page 165.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



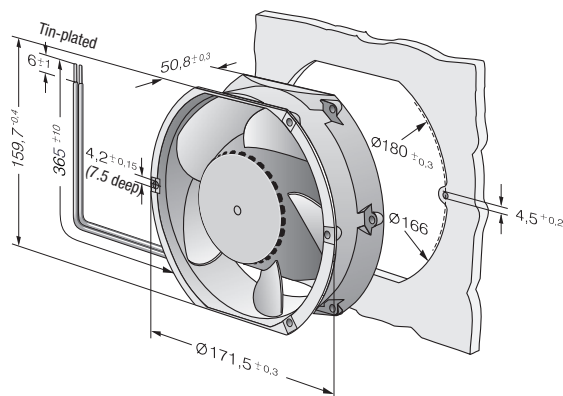
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 930 m³/h
S-Force

DC axial fans

172 x 160 x 51 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 910 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input (standard)
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 6300 TD

Nominal data

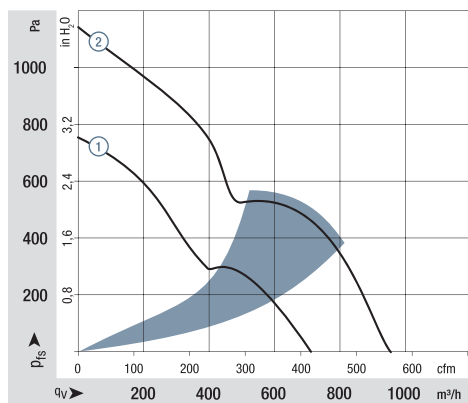
	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
6314/2 TDHHP-015	710	418	24	16...36	69	7.9	■	67	7 000	-20...+75	62 500 / 25 000	105 000	①	
6318/2 TDH4P-007	930	546	48	36...72	75	8.4	■	150	9 200	-20...+75	52 500 / 20 000	87 500	②	

Subject to change

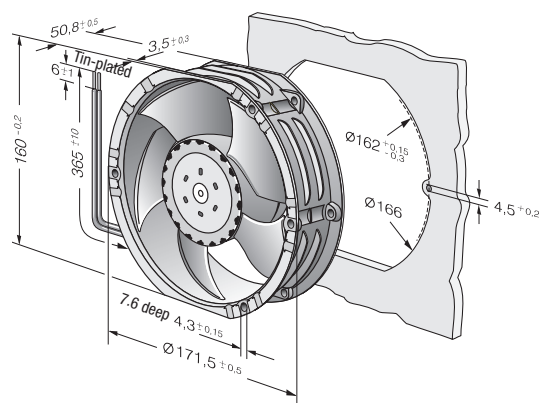
Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.

Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 685 m³/h
S-Panther

DC axial fans

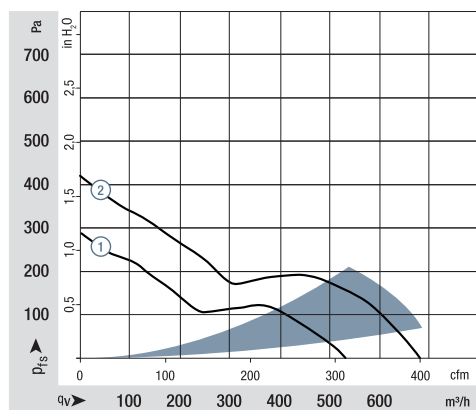
Ø 172 x 51 mm



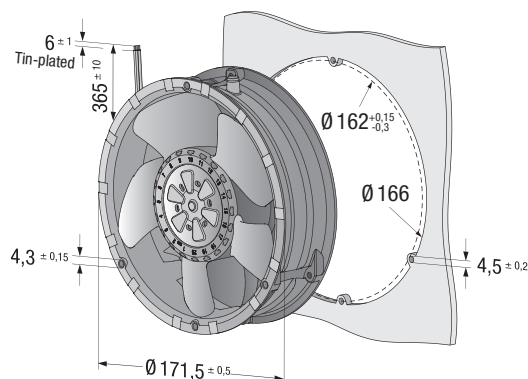
- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** (+) and GND AWG 20, UL 1007, TR 64; speed signal and alarm signal: AWG 22, UL 1007, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 850 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input (standard)
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

Series 6300 N														
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
6314 N/2 HHP	540	318	24	16...32	-	6.9	■	30	4000	-20...+70	80 000 / 40 000	135 000	135 000	①
6318 N/2 H3P	685	403	48	36...60	-	7.5	■	53	5000	-20...+70	77 500 / 40 000	130 000	130 000	②
Subject to change	Speed control range from 1000 rpm ⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.													



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 1030 m³/h
S-Panther

DC axial fans

Ø 172 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** AWG 18, 20 UL 1007, TR 64, speed and alarm signals: AWG 22, UL 1007, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 850 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input (standard)
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

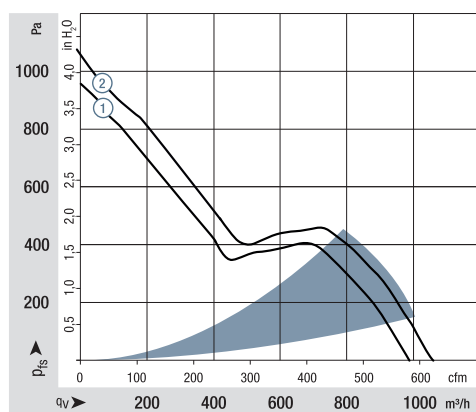
Series 6300 NTD

Nominal data

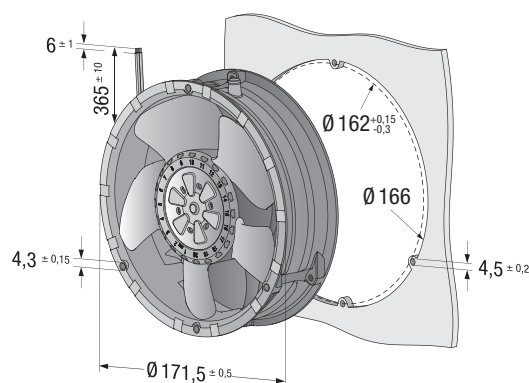
	Air flow		Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
6314 N/2 TDHHP	970	571	24	16...36	-	8.3	■	135	7200	-20...+70	62,500 / 32,500	105,000	①	
6318 N/2 TDH3P	1030	606	48	36...72	83	8.4	■	152	7500	-20...+70	60,000 / 30,000	102,500	②	

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 545 m³/h
S-Force

DC axial fans

Ø 172 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
 - **Direction of air flow:** Exhaust over struts
 - **Direction of rotation:** Counterclockwise, looking towards rotor
 - **Connection:** Via single wires AWG 22, TR 64
 - **Highlights:** Housing with grounding lug for screw M4 x 8 (Torx)
 - **Weight:** 825 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input (standard)
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 6300

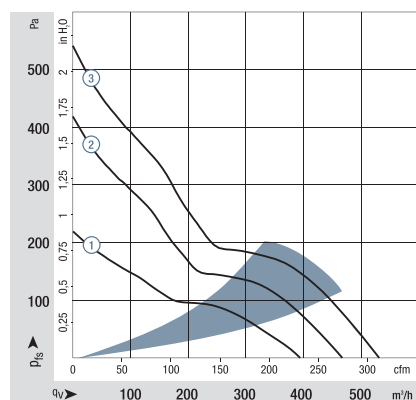
Nominal data

Series 6300												Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range				
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours			
6314/2 MP	395	232	24	16...30	51	6.0	■	14	3 700	-20...+75	82 500 / 32 500	140 000	①		
6314/2 NP	470	276	24	16...30	56	6.5	■	23	4 400	-20...+70	80 000 / 40 000	135 000	②		
6314/2 HP	545	320	24	16...30	58	6.9	■	31	5 000	-20...+65	77 500 / 42 500	130 000	③		
6318/2 HP	545	320	48	36...72	58	6.9	■	32	5 000	-20...+65	77 500 / 42 500	130 000	③		

Subject to change

Speed control range from 700 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.

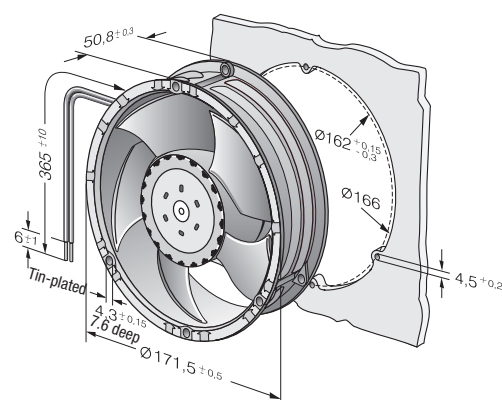


Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 930 m³/h
S-Force

DC axial fans

Ø 172 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 910 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input (standard)
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 6300 TD

Nominal data

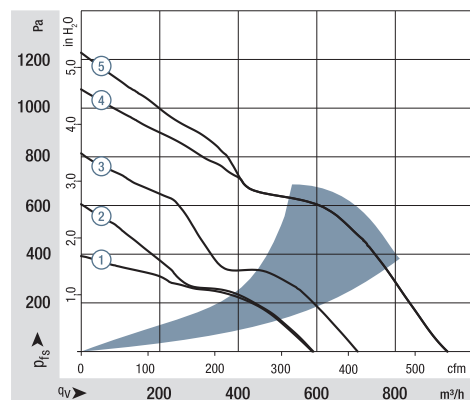
	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption*	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
6312/2 TDHP	600	353	12	8...16	60	7.3	■	40	5 500	-20...+70	75 000 / 37 500	127 500	②	
6314/2 TDHP-298	600	353	24	16...30	60	7.3	■	42	5 500	-20...+65	75 000 / 42 500	127 500	①	
6314/2 TDHP	600	353	24	16...36	60	7.3	■	40	5 500	-20...+75	75 000 / 30 000	127 500	②	
6314/2 TDHHP	710	418	24	16...36	69	7.9	■	67	7 000	-20...+75	62 500 / 25 000	105 000	③	
6314/2 TDH4P	930	545	24	16...36	75	8.4	■	150	9 200	-20...+75	52 500 / 20 000	87 500	⑤	
6318/2 TDHP-299	600	353	48	36...60	60	7.3	■	42	5 500	-20...+65	75 000 / 42 500	127 500	①	
6318/2 TDHP	600	353	48	36...72	60	7.3	■	40	5 500	-20...+75	75 000 / 30 000	127 500	②	
6318/2 TDHHP	710	418	48	36...72	69	7.9	■	67	7 000	-20...+75	62 500 / 25 000	105 000	③	
6318/2 TDH4P	930	545	48	36...72	75	8.4	■	150	9 200	-20...+75	52 500 / 20 000	87 500	④	

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.

Standstill at 0% PWM, maximum speed if control cable is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



* Power consumption – in operation

Fan type	optimum operating range (W)
6318/2 TDHHP	115
6318/2 TDH4P	270

Air performance measured according to: ISO 5801.

Installation category A, without contact protection.

Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.

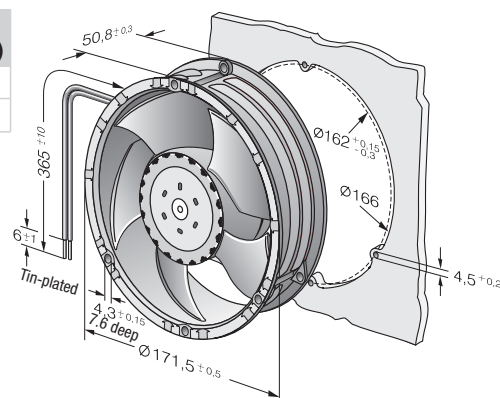
Sound pressure level L_{pA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 1100 m³/h
S-Force

DC diagonal fan

Ø 172 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** (+) and GND: AWG 18, UL 1007, TR 64; speed and alarm signal: AWG 22, UL 1007, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 1050 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input (standard)
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series DV 6300 TD

Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C)	Service life L ₁₀ (T _{max})	Life expectancy L ₁₀ IPC	Curve
Type	m³/h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
DV 6318/2 TDHP*	630	371	48	36...72	68	7.6	■	75	4000	-20...+65	70 000 / 40 000	117 500	①	
DV 6318/2 TDHHP*	770	453	48	36...72	73	8.0	■	135	4900	-20...+65	60 000 / 32 500	102 500	②	
DV 6318/2 TDH4P	1050	617	48	36...72	77	8.7	■	300	6500	-20...+65	50 000 / 27 500	85 000	③	
DV 6318/2 TDH5P**	1100	647	48	36...72	79	8.9	■	360	6800	-20...+65	40 000 / 22 500	67 500	④	

Subject to change

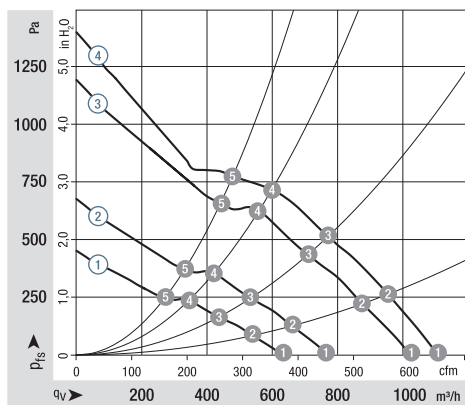
* On request

** Rotor protrusion
a = 3 mm

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed. Standstill at 0% PWM, maximum speed if control cable is interrupted.
The fan has an acceleration of up to 30% that produces a smoother curve.

	n rpm ⁻¹	P _{ed} W	L _{WA} dB(A)	L ₁₀ (40 °C)	L ₁₀ (65 °C)	L ₁₀ IPC (40 °C)
① ①	4000	65,5	79	70 000	40 000	117 500
① ②	3835	64,5	78	72 500	40 000	122 500
① ③	3815	64,5	76	75 000	42 500	127 500
① ④	3930	65	76	77 500	42 500	130 000
① ⑤	4240	66	79	77 500	42 500	130 000
② ①	4900	120	83	60 000	32 500	102 500
② ②	4690	119	82	67 500	37 500	115 000
② ③	4670	119	80	72 500	40 000	122 500
② ④	4870	120	81	75 000	42 500	127 500
② ⑤	5190	121	85	75 000	42 500	127 500

	n rpm ⁻¹	P _{ed} W	L _{WA} dB(A)	L ₁₀ (40 °C)	L ₁₀ (65 °C)	L ₁₀ IPC (40 °C)
③ ①	6500	280	90	50 000	27 500	85 000
③ ②	6230	275	89	62 500	35 000	105 000
③ ③	6200	280	88	70 000	40 000	117 500
③ ④	6450	281	88	72 500	40 000	122 500
③ ⑤	6900	283	92,5	72 500	40 000	122 500
④ ①	6950	345	92	40 000	22 500	67 500
④ ②	6720	345	91	57 500	32 500	97 500
④ ③	6630	345	89,5	62 500	35 000	105 000
④ ④	6850	345	89	67 500	37 500	115 000
④ ⑤	7300	345	94	72 500	40 000	122 500



Air performance measured according to: ISO 5801.

Installation category A, without contact protection.

Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.

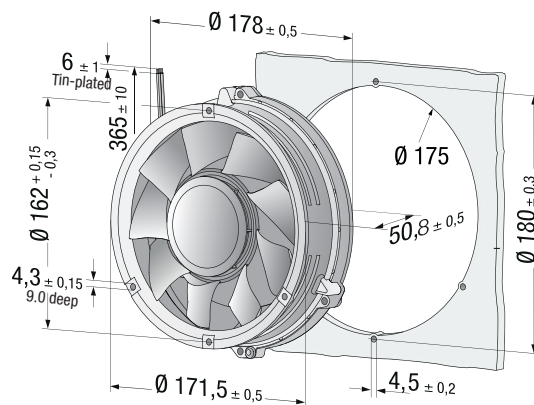
Sound pressure level L_{pA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 1220 m³/h
S-Force

DC axial fans

220 x 200 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 1000 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series 2200 FTD

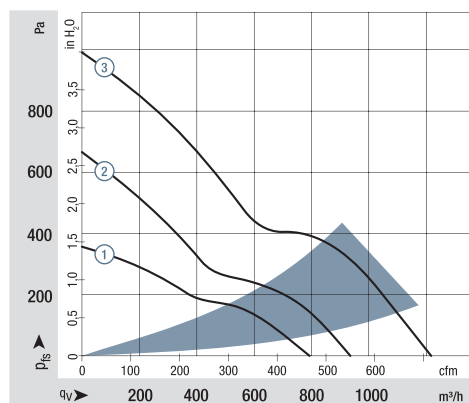
Series 2200 FTD															
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17	Curve
Type		m ³ /h	cfm	VDC	VDC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
2214 F/2 TDHO		790	465	24	16...30	62	7.1	■	35	4250	-20...+75	90 000 / 42 500	152 500	152 500	①
2214 F/2 TDHHO		940	553	24	16...36	66	7.4	■	48	5000	-20...+70	85 000 / 42 500	142 500	142 500	②
2218 F/2 TDHO		790	465	48	36...57	62	7.1	■	35	4250	-20...+75	90 000 / 42 500	152 500	152 500	①
2218 F/2 TDHHO		940	553	48	36...72	66	7.4	■	48	5000	-20...+70	85 000 / 42 500	142 500	142 500	②
2218 F/2 TDH4P		1220	718	48	36...72	72	8.2	■	103	6500	-20...+65	70 000 / 40 000	117 500	117 500	③

Subject to change

Speed control range from 1000 rpm⁻¹ up to maximum nominal speed.

Standstill at 0% PWM, Type O: standstill if control wire is interrupted; Type P: maximum speed if control wire is interrupted.

* Power consumption at free air flow. These values can be significantly higher in the operating point.



Air performance measured according to: ISO 5801.

Installation category A, without contact protection.

Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.

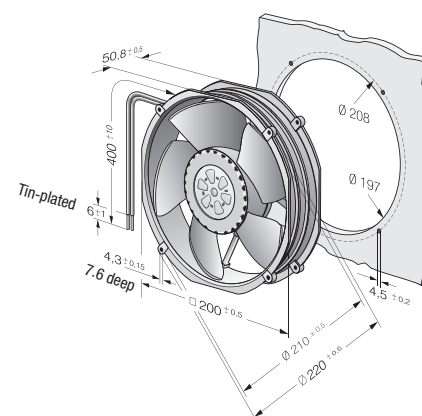
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 1245 m³/h

DC diagonal module

□ 225 x 80 mm

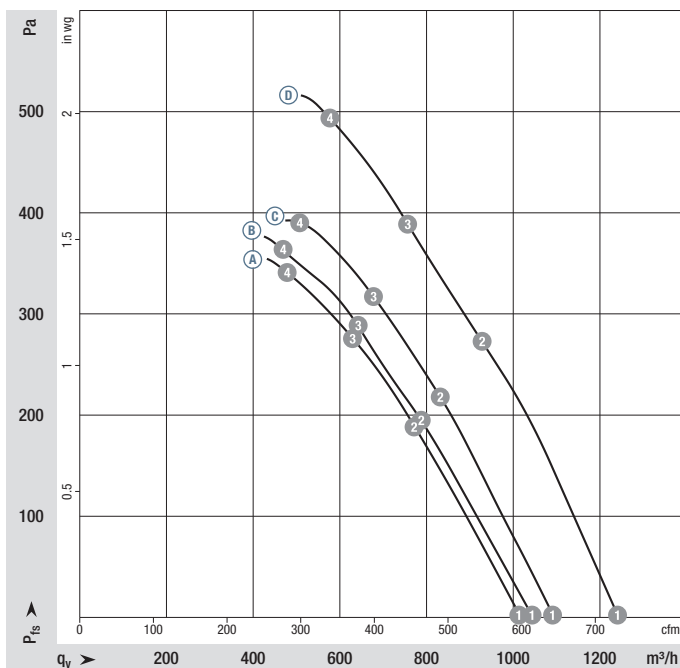


- Material:** Housing and support bracket: Fiberglass-reinforced plastic (PA6)
Impeller: Fiberglass-reinforced plastic (PA6)
Rotor: Painted black
- Number of blades:** 7
- Direction of air flow:** "V"
- Direction of rotation:** Clockwise, looking towards rotor
- Degree of protection:** Ⓐ Ⓒ IP 44, Ⓑ Ⓓ IP 20, depending on installation and position
- Insulation class:** "B"
- Installation position:** Any
- Condensation drainage holes:** Ⓐ Ⓒ none, Ⓑ Ⓓ seen on rotor
- Mode of operation:** Continuous operation (S1)
- Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound power level	Admissible amb. temp.	Weight	Technical features and connection diagram
Type	Motor		VDC	VDC	m³/h	rpm ⁻¹	W	A	dB(A)	°C	kg	
K1G 200-AD65-04	M1G 074-BF	Ⓐ	24	16...28	1020	3 400	95	4.7	76	-25...+60	1.8	p. 262 / J5)
K1G 200-AD31-02	M1G 074-BF	Ⓑ	24	16...28	1045	3 500	110	5.4	77	-25...+70	1.7	p. 262 / J5)
K1G 200-AD49-04	M1G 074-BF	Ⓒ	48	36...57	1095	3 650	120	3.4	77	-25...+60	1.8	p. 262 / J5)
K1G 200-AD37-02	M1G 074-BF	Ⓓ	48	36...57	1245	4 140	183	5.6	81	-25...+70	1.7	p. 262 / J5)

Subject to change

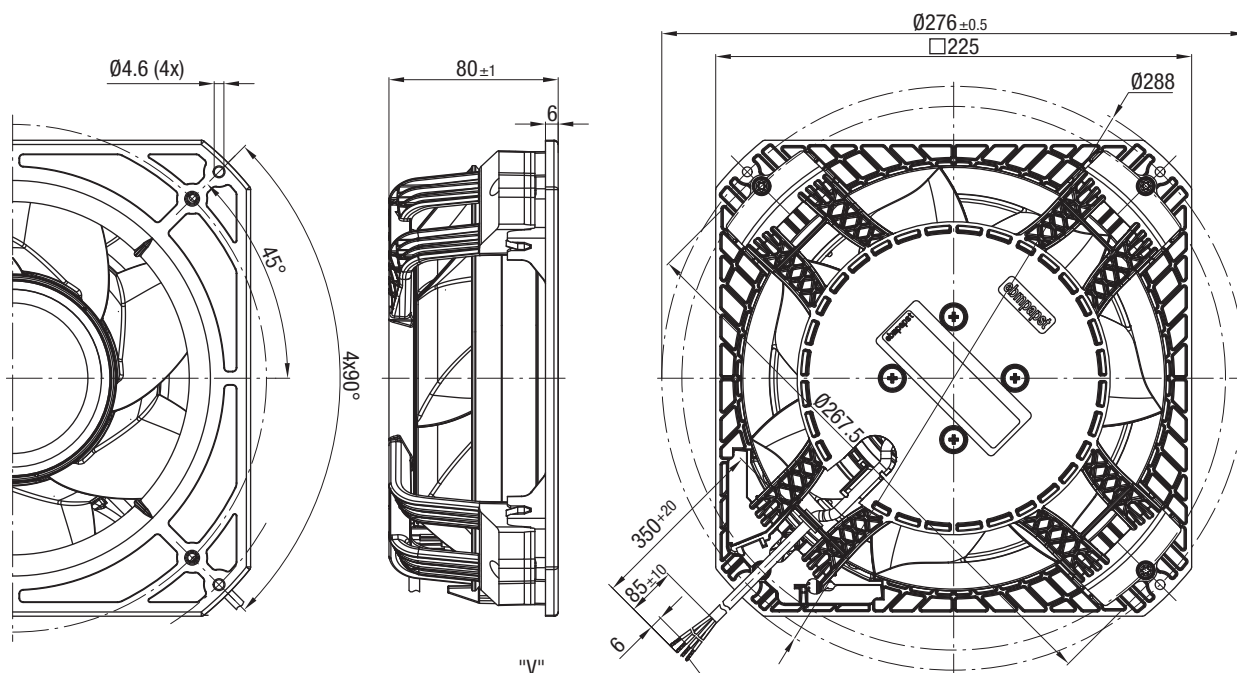
Curves:



Air performance measured according to: ISO 5801, Installation category A, without contact protection. Suction-side noise levels: LWA according to ISO 13347, LpA measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

	n	P _{ed}	I	L _{WA}
	rpm ⁻¹	W	A	dB(A)
Ⓐ ①	3400	95	4.70	76
Ⓐ ②	3410	116	5.61	74
Ⓐ ③	3410	119	5.75	74
Ⓐ ④	3410	117	5.62	76
Ⓑ ①	3500	110	5.40	77
Ⓑ ②	3510	127	6.24	75
Ⓑ ③	3510	129	6.31	75
Ⓑ ④	3510	125	6.15	76
Ⓒ ①	3650	120	3.40	77
Ⓒ ②	3645	141	3.90	75
Ⓒ ③	3640	145	3.99	76
Ⓒ ④	3645	141	3.88	80
Ⓓ ①	4140	183	5.60	81
Ⓓ ②	4080	212	6.46	79
Ⓓ ③	4060	213	6.52	79
Ⓓ ④	4105	211	6.43	80

- **Technical features:** See connection diagram p. 262
- **EMC:** Immunity to interference according to EN 61000-6-2 (industrial environment)
Interference emission according to EN 55022 (Class B)
- **Cable exit:** Lateral
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1
- **Approvals**
 - Ⓐ Ⓒ UL 1004-1, CSA C22.2 no. 77
 - Ⓑ Ⓓ EAC, UL 1004-1, CSA C22.2 no. 77



Cable assignment:

Red = UN
Yellow = 0-10 VDC
White = tach output
Blue = GND

Max. 1650 m³/h

DC diagonal module

□ 225 x 89 mm

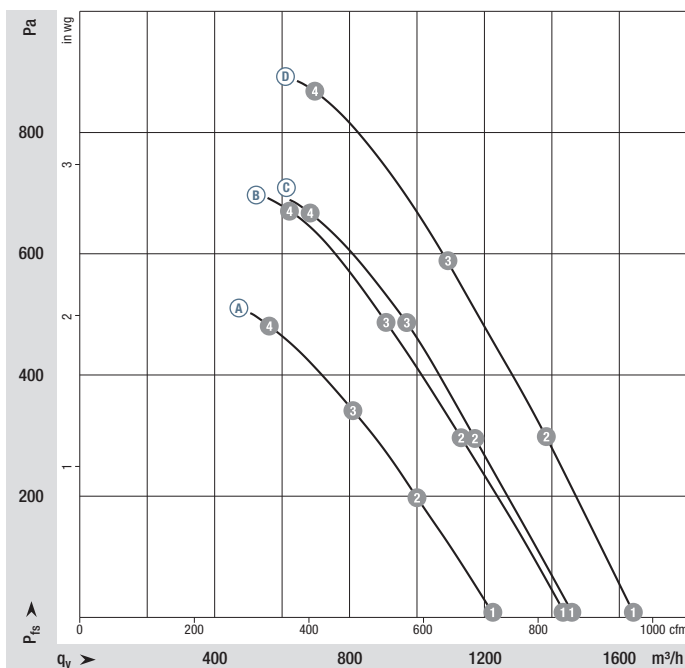


- **Material:** Housing and support bracket: Plastic (PA)
Impeller: Plastic (PA)
Rotor: Painted black
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** Ⓐ Ⓒ IP 44, Ⓑ Ⓓ IP 20, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** Ⓐ Ⓒ none, Ⓑ Ⓓ seen on rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound power level	Admissible amb. temp.	Weight	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	°C	kg	
K3G 200-BD46-04	M3G 074-CF	Ⓐ	24	16...28	1240	4120	170	7.0	80	-25...+60	2.3	p. 262 / J5)
K3G 200-BD44-02	M3G 074-CF	Ⓑ	24	16...28	1445	4830	275	11.5	84	-25...+60	2.3	p. 262 / J5)
K3G 200-BD64-04	M3G 074-CF	Ⓒ	48	36...57	1475	4875	275	5.8	85	-25...+60	2.3	p. 262 / J5)
K3G 200-BDA8-02	M3G 074-CF	Ⓓ	48	36...57	1650	5470	400	8.4	88	-25...+60	2.3	p. 262 / J5)

Subject to change

Curves:

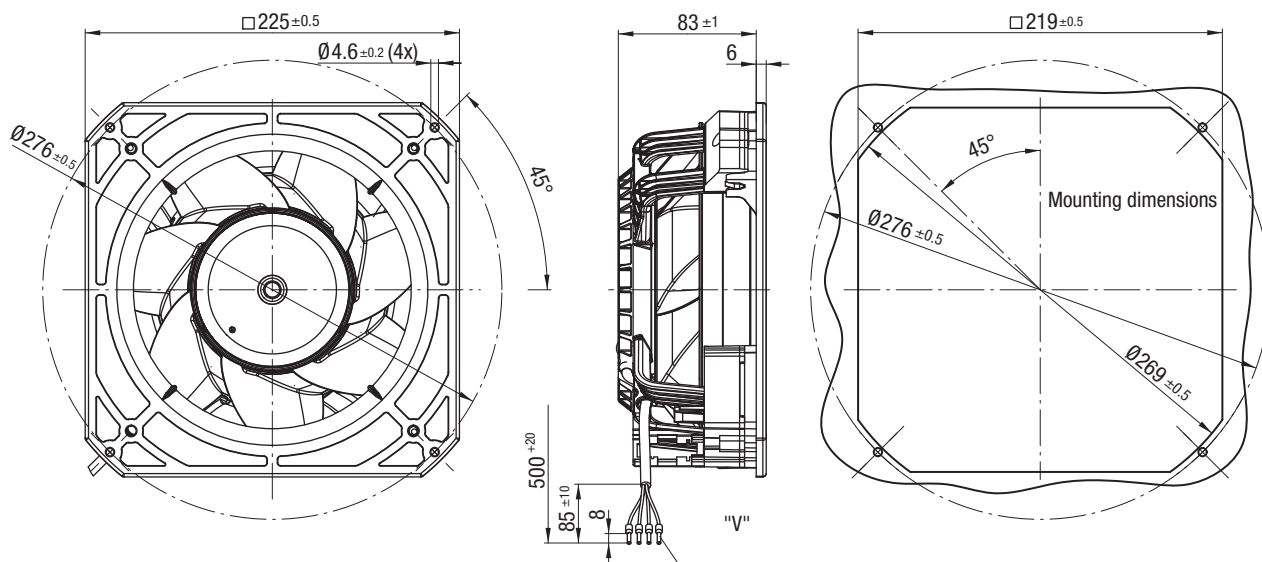


	n	P _{ed}	I	L _{WA}
	rpm ⁻¹	W	A	dB(A)
Ⓐ ①	4120	170	7.00*	80
Ⓐ ②	4025	180	7.52*	77
Ⓐ ③	4005	187	7.80*	76
Ⓐ ④	4045	187	7.78*	78
Ⓑ ①	4830	275	11.50*	84
Ⓑ ②	4720	294	12.24*	81
Ⓑ ③	4685	299	12.48*	80
Ⓑ ④	4715	295	12.30*	83
Ⓒ ①	4875	275	5.80*	85
Ⓒ ②	4795	300	6.27*	81
Ⓒ ③	4755	307	6.41*	80
Ⓒ ④	4780	304	6.35*	82
Ⓓ ①	5470	400	8.40*	88
Ⓓ ②	5365	426	8.89*	85
Ⓓ ③	5310	438	9.17*	83
Ⓓ ④	5355	431	9.01*	87

* Current measured at nominal voltage.

Air performance measured according to: ISO 5801, Installation category A, without contact protection. Suction-side noise levels: LWA according to ISO 13347, LpA measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 262
- **EMC (48 V):** Immunity to interference according to EN 61000-6-2 (industrial environment)
Interference emission according to EN 55022 (Class B, household environment)
- **Cable exit:** Lateral
- **Conformity with standard(s):** EN 60335-1
- **Approvals:** (24 V) EAC
(48 V) EAC, CCC



Cable assignment:

Red = UN
Yellow = 0-10 VDC
White = tach output
Blue = GND

PVC AWG 16 cable
4x crimped ferrules

Max. 2070 m³/h

DC axial fans

Ø 250 mm

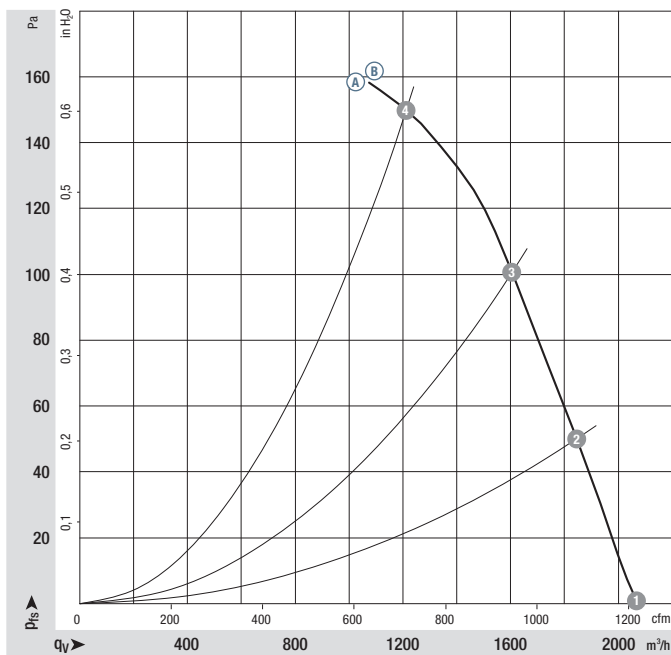


- **Material:** Fan housing: Die-cast aluminum
Blades: Plastic (PP)
Rotor: Thick-film passivated
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** On rotor side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Max. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m³/h	rpm ⁻¹	W	A	Pa	°C	
W1G250-HJ87 -02	M1G 074-BF	Ⓐ	24	16-28	2070	3090	120	7.00	150	-25...+60	p. 258 / E)
W1G250-HJ63 -02	M1G 074-BF	Ⓑ	48	36-57	2070	3090	120	3.40	150	-25...+60	p. 258 / E)

Subject to change

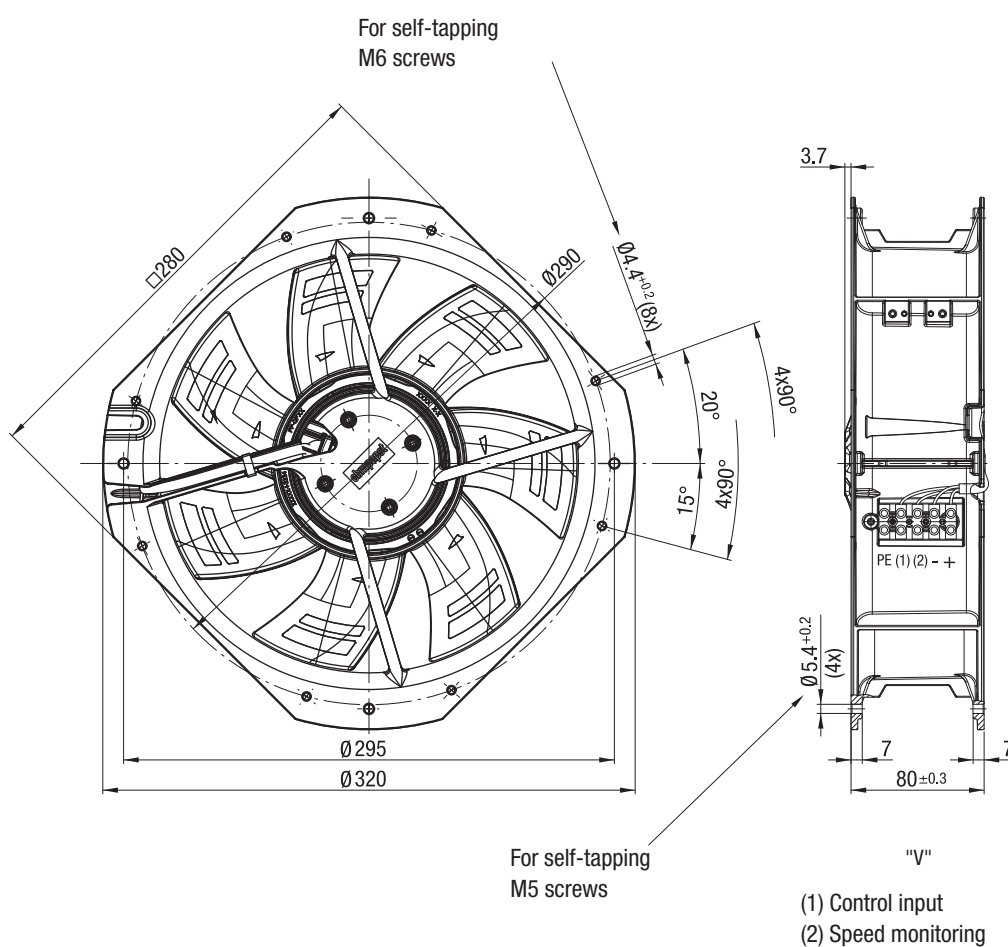
Curves:



	n	P _{ed}	I	L _{WA}
	rpm ⁻¹	W	A	dB(A)
Ⓐ ①	3090	120	6.80	74
Ⓐ ②	2950	124	7.10	73
Ⓐ ③	2820	127	7.43	73
Ⓐ ④	2730	130	7.80	78
Ⓑ ①	3090	120	3.40	74
Ⓑ ②	2950	124	3.55	73
Ⓑ ③	2820	127	3.74	73
Ⓑ ④	2730	130	3.90	78

Air performance measured according to: ISO 5801, Installation category A, without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{WA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 258
- **EMC:** Interference emission acc. to EN 55022 (Class B)
Immunity to interference acc. to EN 61000-6-2 (industrial environment)
- **Electrical hookup:** Via terminal strip
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1



Max. 2345 m³/h

DC axial fans – HyBlade®

Ø 300 mm

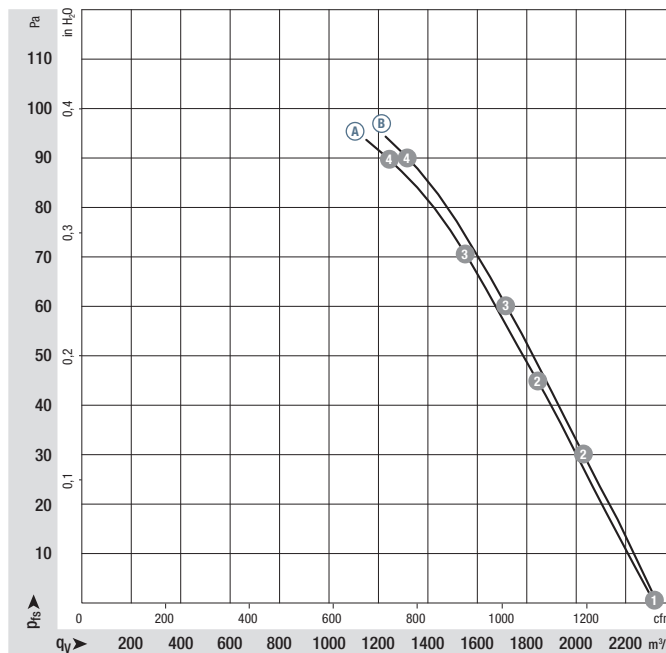


- **Material:** Finger guard: Steel, phosphated and coated in black plastic
Fan housing: Sheet steel, pre-galvanized and coated in black plastic
Blades: Plastic (PP)
Rotor: Painted black
- **Number of blades:** 5
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Max. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	Pa	°C	
*1G 300	M1G 074-CF	Ⓐ	24	16-28	2320	1830	80	3.80	100	-25..+60	p. 262 / J5)
*1G 300	M1G 074-CF	Ⓑ	48	36-57	2345	1830	80	1.90	100	-25..+60	p. 262 / J5)

Subject to change

Curves:

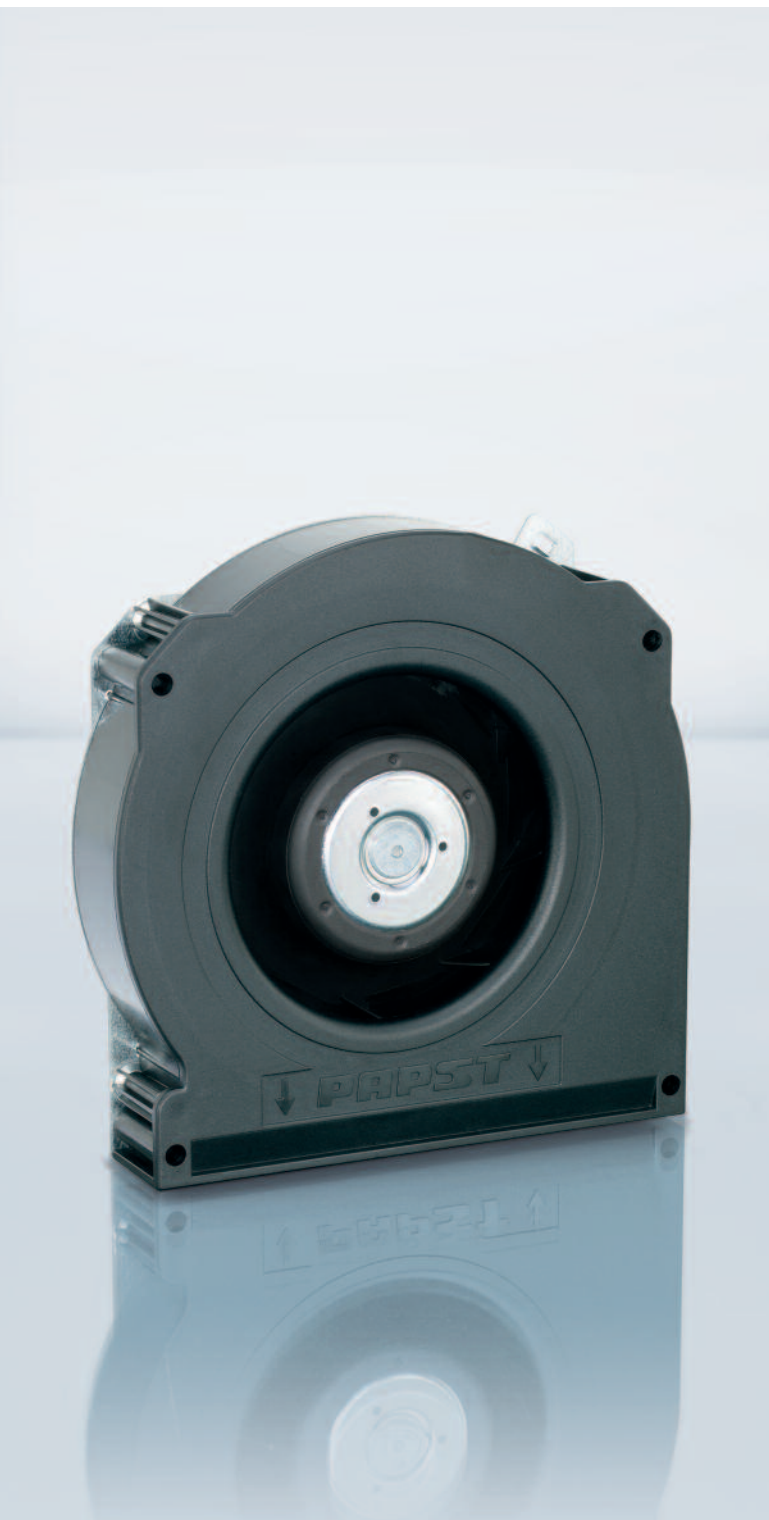


	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ ①	1810	80	3.80	67
Ⓐ ②	1730	86	4.03	67
Ⓐ ③	1690	87	4.10	66
Ⓐ ④	1635	89	4.21	70
Ⓑ ①	1870	87	2.00	68
Ⓑ ②	1805	90	2.10	67
Ⓑ ③	1765	91	2.13	67
Ⓑ ④	1695	92	2.19	69

Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection. Suction-side noise levels: LWA according to ISO 13347, L_{PA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>



DC centrifugal fans



DC centrifugal fan overview	93
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DC centrifugal fans and blowers	140

DC centrifugal fans

Technical information



Product line

Our centrifugal product line includes fans for every application. Whether as free-running impellers with a diameter between 97 mm and 225 mm, or as assemblies in a ready-to-install, compact housing with inlet ring with an edge length between 51 mm and 270 mm. Of course, all models feature highly efficient, brushless motor technology.

Electronic protection against reverse polarity

ebm-papst DC fans have electronically commutated drives with electronic protection against reverse polarity. The electronics are integrated in the fan's impeller hub to save space.

Product life expectancy

A distinctive feature of DC fan technology is the amazing product life expectancy. The outstanding efficiency of the brushless drive results in lower heat stress for the bearings, which significantly increases the service life of the fan.

Degree of protection

DC fans with sleeve and ball bearings are powered by class E insulated motors. All ebm-papst fans conform to the requirements of degree of protection IP 20. Fans conforming to IP 54 / IP 68 and special degrees of protection are also available.

Voltage range

Many of our DC fans can be operated on voltages that are up to 50% lower and 25% higher than their nominal voltage (see voltage range in the technical tables). This allows the air performance to be adapted to the cooling requirements and the noise to be reduced, even if the fan does not have a control input.

Closed-loop speed control and monitoring

Closed-loop speed control and function monitoring are becoming increasingly important in many applications. ebm-papst offers many fans in the standard design with a control input and open-collector speed signal.

S-Force centrifugal RadiCal

The new S-Force centrifugal fans provide peak performance among fans of this type. With air flow capacity of over 1500 m³/h and a pressure increase of up to 1000 pascals, the highest heat flows are manageable. The models are extremely efficient due to the multi-pole, electronically commutated drive motors, and can be adapted individually to every application thanks to intelligent motor features. Some models use our new, highly efficient RadiCal impellers.

Overview of air performance

				Air flow																				Page	DC axial fans		
Dimension	Series	Air flow		10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	1000	2000	2500			
mm		m³/h																									
105 x 59 x 79	RV 40	18...24																								95	DC centrifugal fans
□ 51 x 15	RLF 35	9.6																								96	
□ 76 x 27	RL 48	22...28																								97	
97 x 93.5 x 33	RL 65	56...61																								98	
□ 121 x 37	RL 90 N	40...55																								99	
□ 127 x 25	RLF 100	64...80																								100	
□ 135 x 38	RG 90 N	55																								101	
□ 180 x 40	RG 125 N	60...137																								102	
□ 180 x 40	RG 140 NTD	118	NEW																							103	
□ 220 x 56	RG 160 N	139...209																								104	
□ 220 x 56	RG 160 NTD	59...444																								105	
S-Force □ 226 x 85	RG 190 TD	630...930																								106	DC fans - specials
S-Force □ 270 x 99	RG 220 TD	1090...1100																								107	
S-Force □ 270 x 119	RG 225 TD	1040...1450																								108	
S-Force ∅ 97 x 41	RET 97 TD	220																								109	
∅ 104 x 25	REF 100	86...104																								110	
∅ 101 x 52	RER 101 N	162...190																								111	
S-Force ∅ 120 x 54	RER 120 TD	320...390																								112	
∅ 120	R1G 120	250																								114	
∅ 138 x 35	RER 125 N	110...166																								116	
S-Force ∅ 133 x 91	RER 133 TD	460...565																								117	
∅ 165 x 51	RER 160 N	255																								118	
S-Force ∅ 165 x 51	RER 160 NTD	360																								119	
S-Force ∅ 175 x 55	REF 175 TD	800																								120	
S-Force ∅ 175 x 69	RER 175 TD	600...980																								121	
S-Force ∅ 190 x 69	RER 190 TD	650...970																								122	
∅ 190	R3G 190	880...930																								124	
∅ 220	R3G 220	1200...1215																								126	
S-Force ∅ 220 x 71	RER 220 TD	1063...1250																								128	
S-Force ∅ 225 x 99	RER 225 TD	1190...1600																								129	
∅ 225	R3G 225	1300...1340																								130	
∅ 250	R3G 250	1505...1640																								132	
∅ 280	R3G 280	2160...2190																								134	
∅ 310	R3G 310	2310...2380																								136	
201...413 x 50 x 48	QG 030	75...155																								138	
∅ 85	*1G 085	95																								140	
∅ 97	*1G 097	95																								142	
∅ 108	*1G 108	200																								144	
∅ 120	*1G 120	255																								146	
∅ 133	*1G 133	225																								148	
∅ 140	*1G 140	400...410																								150	
∅ 146	*1G 146	465...470																								152	
∅ 160	*1G 160	505																								154	
∅ 133	D1G 133	700																								156	
∅ 133	D1G 133	1020																								158	
∅ 146	D1G 146	1000																								160	
∅ 160	D1G 160	980																								162	
Subject to change																											
		m³/h		10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	1000	2000	2500		Accessories	

Centrifugal fans for DC operation

Overview of technically feasible designs

Dimension			VDE, UL, CSA	SINTEC sleeve bearings / ball bearings	Speed signal	Go / NoGo alarm	Alarm with speed limit	External temperature sensor	Internal temperature sensor	PWM control input	Analog control input	Multi-options control input	Moisture protection	IP >= 54	IP 68	Salt spray protection	Page
	mm	Series															P.
Centrifugal fans																	
	105 x 59 x 79	RV 40	• ■	•	–	–	–	–	–	–	–	–	•	–	–	–	95
	□ 51 x 15	RLF 35	yes ■	•	–	–	–	–	•	–	–	–	•	–	–	–	96
	□ 76 x 27	RL 48	yes ■	•	•	•	•	•	•	•	–	–	•	–	–	–	97
	97 x 93.5 x 33	RL 65	yes ■	•	•	•	•	•	•	•	–	–	•	–	–	–	98
	□ 121 x 37	RL 90 N	yes □/■	•	•	•	•	•	•	•	–	–	•	•	•	•	99
	□ 127 x 25	RLF 100	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	–	100
	□ 135 x 38	RG 90 N	yes □/■	•	•	•	•	•	•	•	–	–	•	•	•	•	101
	□ 180 x 40	RG 125 N	yes ■	•	•	•	•	•	•	•	–	–	•	•	•	•	102
NEW	□ 180 x 40	RG 140 NTD	yes ■	•	•	•	•	•	–	•	•	•	•	•	•	•	103
	□ 220 x 56	RG 160 N	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	•	104
	□ 220 x 56	RG 160 NTD	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	•	105
<i>S-Force</i>	□ 226 x 85	RG 190 TD	yes ■	•	•	•	•	•	•	•	•	•	•	•	–	•	106
<i>S-Force</i>	□ 270 x 99	RG 220 TD	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	•	107
<i>S-Force</i>	□ 270 x 132	RG 225 TD	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	•	108
<i>S-Force</i>	Ø 97 x 41	RET 97 TD	yes ■	•	•	•	•	•	•	•	–	–	•	–	–	–	109
	Ø 100 x 25	REF 100	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	–	110
	Ø 101 x 52	RER 101 N	yes ■	•	•	•	•	•	•	•	–	–	•	–	–	–	111
<i>S-Force</i>	Ø 120 x 54	RER 120 TD	yes ■	•	•	•	•	•	•	•	–	–	•	–	–	–	112
	Ø 138 x 35	RER 125 N	yes ■	•	•	•	•	•	•	•	–	–	•	•	•	•	116
<i>S-Force</i>	Ø 133 x 91	RER 133 TD	yes ■	•	•	•	•	•	•	•	•	•	•	•	–	•	117
	Ø 165 x 51	RER 160 N	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	•	118
<i>S-Force</i>	Ø 165 x 51	RER 160 NTD	yes ■	•	•	•	•	•	•	•	–	–	•	•	–	–	119
<i>S-Force</i>	Ø 175 x 55	REF 175 TD	yes ■	•	•	•	•	•	•	•	•	•	•	•	–	–	120
<i>S-Force</i>	Ø 175 x 69	RER 175 TD	yes ■	•	•	•	•	•	•	•	•	•	•	•	–	•	121
<i>S-Force</i>	Ø 190 x 69	RER 190 TD	yes ■	•	•	•	•	•	•	•	•	•	•	•	–	•	122
<i>S-Force</i>	Ø 220 x 71	RER 220 TD	yes ■	•	•	•	•	•	•	•	•	•	•	•	–	•	128
<i>S-Force</i>	Ø 225 x 99	RER 225 TD	yes ■	•	•	•	•	•	•	•	•	•	•	•	–	•	129
	201...413 x 50 x 48	QG 030	yes □/■	•	–	–	–	–	–	–	–	–	•	–	–	–	138
Subject to change																	

– Not yet available □ Sleeve bearings
• Available ■ Ball bearings

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects. As a rule they are not available off the shelf and are subject to minimum volumes.

Please consult your customer support representative about the feasibility of your special variant.

Optional special versions (see page 12)

On the catalog pages and in the overview on page 12, we provide information about the special designs that are technically feasible in the fan series. Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special

versions are designed for specific customers and projects and are usually not available off the shelf.

Max. 24 m³/h

DC centrifugal fans

105 x 59 x 79 mm



- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 100 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Moisture protection

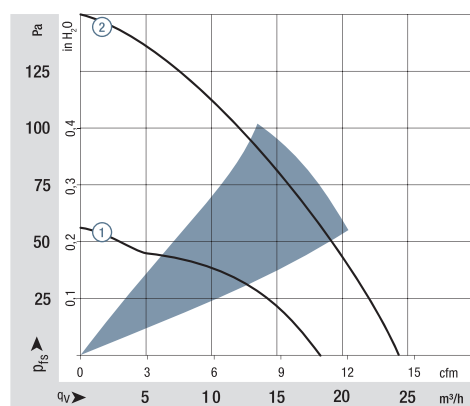
1) Fiberglass-reinforced plastic

Series RV 40

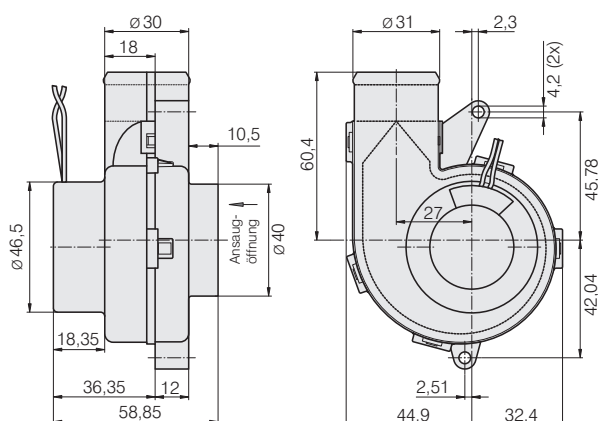
Nominal data

	Air flow		Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RV 40-18/12 L	18	10.6	12	9...16	4.0	■	2.0	3 900	-20...+70	70 000 / 35 000	117 500	①	
RV 40-18/12 H	24	14.1	12	9...16	5.0	■	4.5	4 800	-20...+70	50 000 / 25 000	85 000	②	

Subject to change



Air performance measured according to:
ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m; Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The acoustic values are only valid for the described measurement setup and may vary depending on the installation situation.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. **9.6** m³/h

DC centrifugal fans

□ 51 x 15 mm

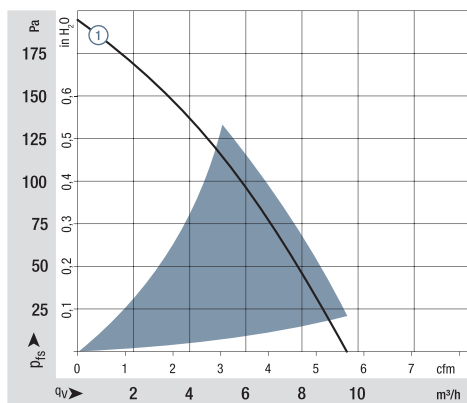


- **Material:** Scroll housing: GRP⁽¹⁾
Impeller: GRP⁽¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 40 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal - PWM control input
 - Moisture protection

1) Fiberglass-reinforced plastic

Series RLF 35													
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RLF 35-8/12 N	9.6	5.64	12	8...13.2	5.5	■	3.5	6 700	-20...+70	60 000 / 30 000	102 500	102 500	①
RLF 35-8/14 N	9.6	5.64	24	14...28	5.5	■	4.3	6 700	-20...+70	60 000 / 30 000	102 500	102 500	①

Subject to change



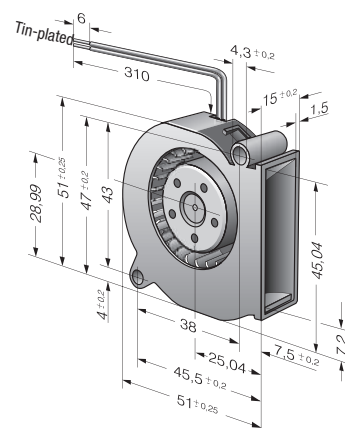
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance
from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general-conditions>



Max. 28 m³/h

DC centrifugal fans

□ 76 x 27 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

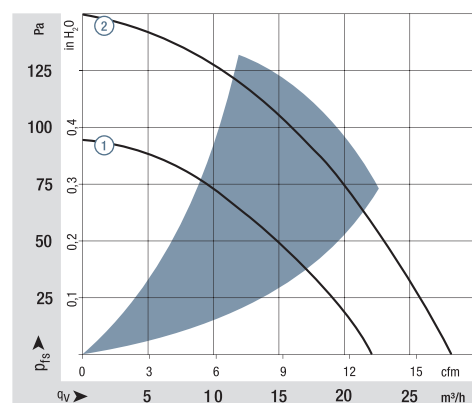


- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 75 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go- / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

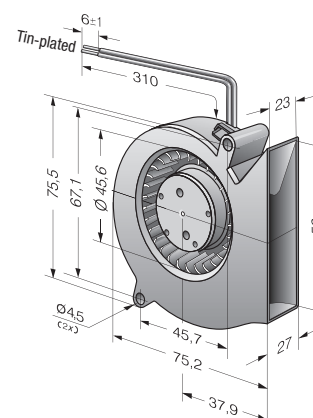
1) Fiberglass-reinforced plastic

Series RL 48													
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
RL 48-19/12 ML	22	12.9	12	8...15	5.3	■	5.0	3 500	-20...+70	70 000 / 35 000	117 500	①	
RL 48-19/12	28	16.5	12	8...13.5	5.7	■	4.6	4 400	-20...+70	60 000 / 30 000	102 500	②	
RL 48-19/14 ML	22	12.9	24	18...28	5.3	■	5.0	3 500	-20...+70	70 000 / 35 000	117 500	①	
RL 48-19/14	28	16.5	24	18...26.4	5.7	■	4.4	4 400	-20...+70	60 000 / 30 000	102 500	②	

Subject to change



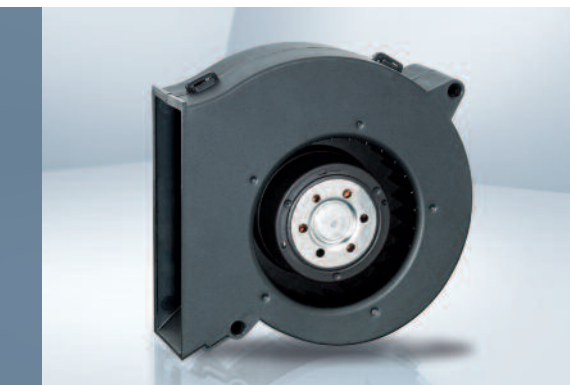
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from
fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 61 m³/h

DC centrifugal fans

97 x 93.5 x 33 mm

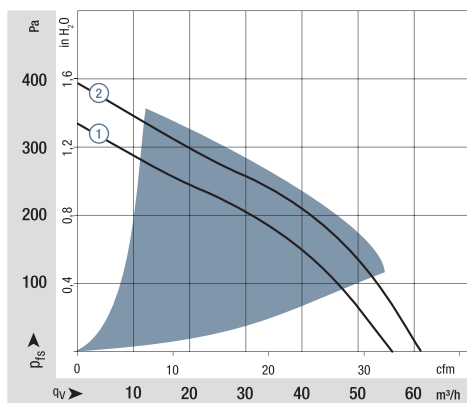
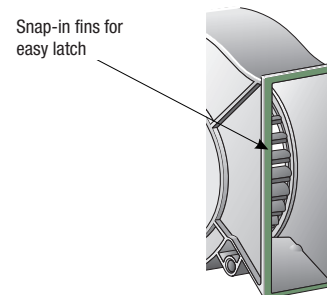


- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** via single wires AWG 26, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 170 g
- **Possible special versions:**
(See chapter DC fans - specials):
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

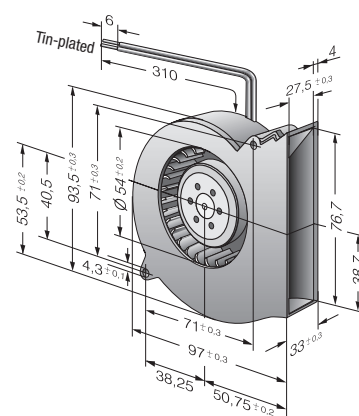
1) Fiberglass-reinforced plastic

Series RL 65													
Nominal data	Air flow		Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
	m ³ /h	cfm											
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■/■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	Curve
RL 65-21/12	56	32,9	12	6.8...13.8	6.6	■	15.0	4 500	-20...+70	60 000 / 30 000	102 500	102 500	①
RL 65-21/12 H	61	35,8	12	6.8...13.2	6.8	■	19.2	4 900	-20...+55	55 000 / 40 000	92 500	92 500	②
RL 65-21/14	56	32,9	24	12...26.4	6.6	■	14.0	4 500	-20...+70	60 000 / 30 000	102 500	102 500	①
RL 65-21/14 H	61	35,8	24	12...26.4	6.8	■	18.0	4 900	-20...+60	55 000 / 35 000	92 500	92 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 55 m³/h

DC centrifugal fans

□ 121 x 37 mm



- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Forward-curved impeller
- **Weight:** 420 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

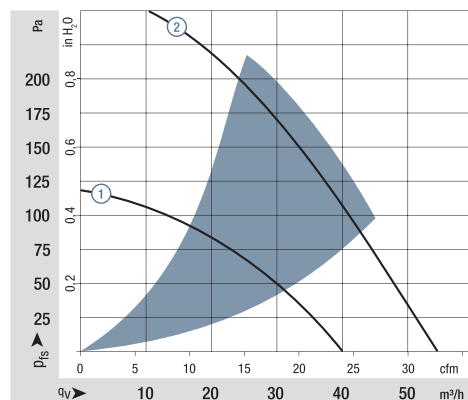
1) Fiberglass-reinforced plastic

Series RL 90 N

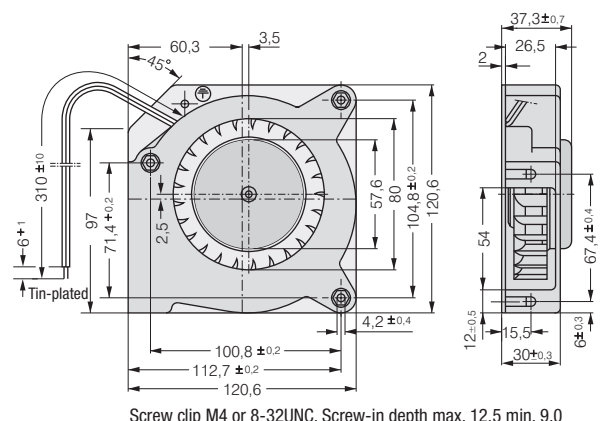
Nominal data

Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
RL 90-18/12 N	40	23.5	12	7...15	5.8	■	6.3	2 500	-30...+75	62 500 / 27 500	105 000	①
RL 90-18/14 NG	40	23.5	24	12...28	5.8	■	5.6	2 500	-20...+75	62 500 / 27 500	105 000	①
RL 90-18/14 N	40	23.5	24	12...28	5.8	■	5.6	2 500	-30...+75	62 500 / 27 500	105 000	①
RL 90-18/18 NH	55	32.4	48	36...53	6.9	■	14.7	3 500	-30...+65	32 500 / 17 500	55 000	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m; Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The acoustic values are only valid for the described measurement setup and may vary depending on the installation situation.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>

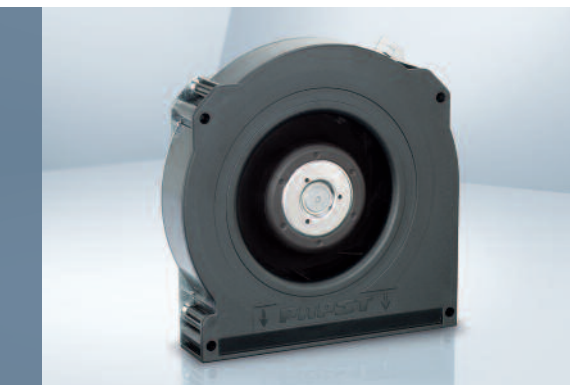


Screw clip M4 or 8-32UNC. Screw-in depth max. 12.5 min. 9.0

Max. 80 m³/h

DC centrifugal fans

□ 127 x 25 mm

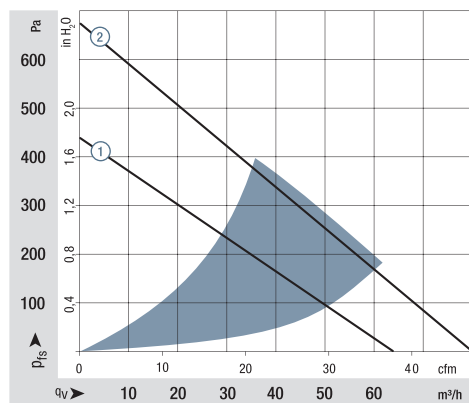


- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Optional protective cap for outlet opening
Backward-curved impeller
- **Weight:** 320 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54

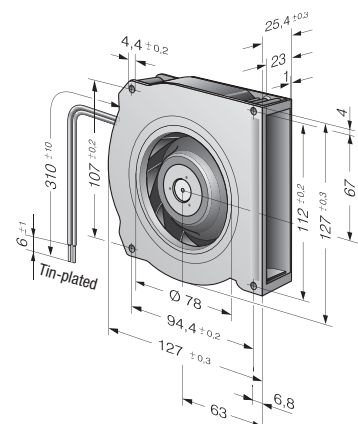
1) Fiberglass-reinforced plastic

Series RLF 100													
Nominal data	Air flow		Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
	m ³ /h	cfm											
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	Curve
RLF 100-11/12	64	37.7	12	8...15	6.4	■	8.0	5 100	-20...+75	80 000 / 30 000	135 000	135 000	①
RLF 100-11/14	64	37.7	24	16...30	6.4	■	8.0	5 100	-20...+75	80 000 / 30 000	135 000	135 000	①
RLF 100-11/18	64	37.7	48	36...60	6.4	■	8.6	5 100	-20...+75	80 000 / 30 000	135 000	135 000	①
High speed models with open-collector tachometer and PWM speed control.													
RLF 100-11/12/2 HP-200	80	47.1	12	10...13.2	7.5	■	18.6	6 400	-20...+60	72 500 / 45 000	122 500	122 500	②
RLF 100-11/18/2 HP-182	80	47.1	48	43...53	7.5	■	17.0	6 400	-20...+70	72 500 / 35 000	122 500	122 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 55 m³/h

DC centrifugal fans

□ 135 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

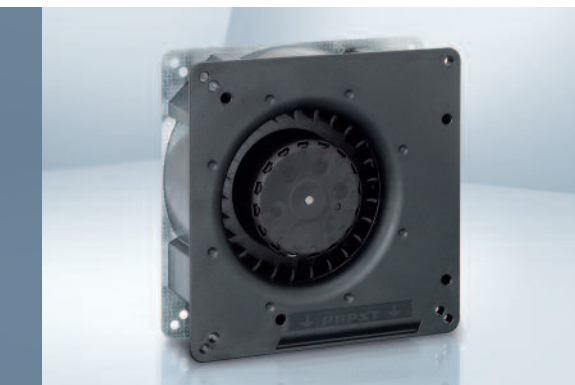
ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

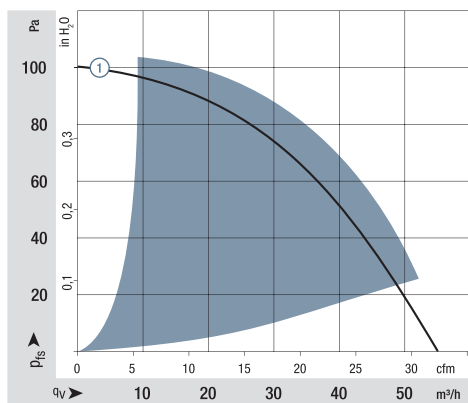


- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** Via single wires AWG 22, TR 64
48 V model: Flat plug
6.3 x 0.8 mm for ground
conductor
- **Highlights:** Forward-curved impeller
- **Weight:** 440 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

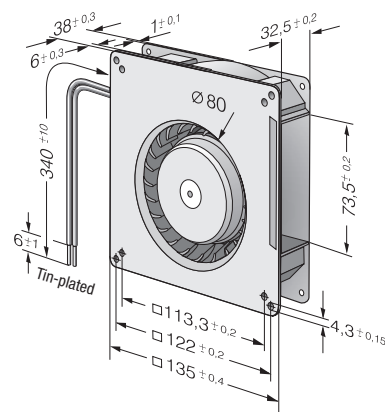
1) Fiberglass-reinforced plastic

Series RG 90 N													
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RG 90-18/12 N	55	32.4	12	7...15	5.5	■	6.7	2 200	-30...+75	62 500 / 27 500	105 000	105 000	①
RG 90-18/14 NG	55	32.4	24	12...28	5.5	■	6.2	2 200	-10...+75	62 500 / 27 500	105 000	105 000	①
RG 90-18/14 N	55	32.4	24	12...28	5.5	■	6.2	2 200	-30...+75	62 500 / 27 500	105 000	105 000	①
RG 90-18/18 N	55	32.4	48	36...56	5.5	■	6.1	2 200	-30...+75	62 500 / 27 500	105 000	105 000	①
Subject to change													

Subject to change



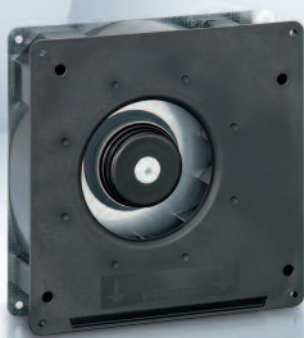
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 137 m³/h

DC centrifugal fans

□ 180 x 40 mm



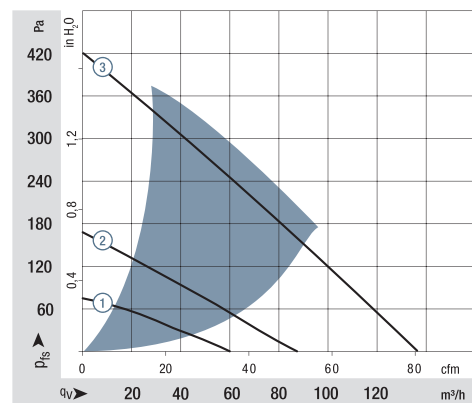
- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** Via single wires AWG 22, TR 64
48 V model: Flat plug
6.3 x 0.8 mm for ground
conductor
- **Highlights:** Backward-curved impeller
- **Weight:** 730 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

1) Fiberglass-reinforced plastic

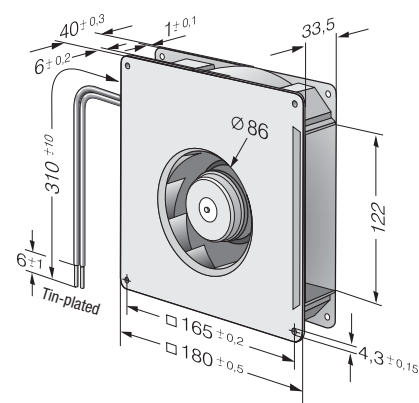
Series RG 125 N

Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RG 125-19/12 NM	60.0	35.3	12	7...15	4.8	■	2.0	1 750	-30...+75	70 000 / 30 000	117 500	117 500	①
RG 125-19/12 N	87.5	51.5	12	7...15	5.8	■	5.2	2 550	-30...+75	62 500 / 27 500	105 000	105 000	②
RG 125-19/14 NM	60.0	35.3	24	12...28	4.8	■	2.0	1 750	-30...+75	70 000 / 30 000	117 500	117 500	①
RG 125-19/14 N	87.5	51.5	24	12...28	5.8	■	4.9	2 550	-30...+75	62 500 / 27 500	105 000	105 000	②
RG 125-19/18 N	87.5	51.5	48	36...56	5.8	■	4.8	2 550	-30...+75	62 500 / 27 500	105 000	105 000	②
RG 125-19/18 NH	137	80.6	48	36...56	7.0	■	19.0	4 000	-20...+70	55 000 / 27 500	92 500	92 500	③

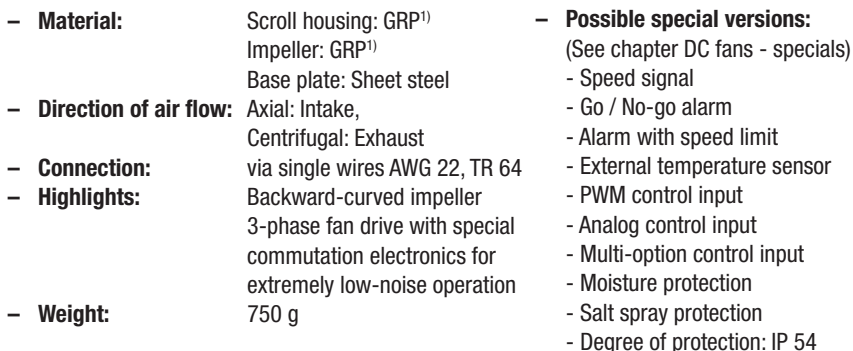
Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



□ 180 x 40 mm



Series RG 140 NTD

Subject to change

Higher performance levels on request.

Technical drawing of a square fan unit. The drawing shows a top view and a side view. The top view is a square with a central circular fan blade assembly. The side view shows the thickness of the unit. Dimensions and tolerances are provided for various parts:

- Top edge: 40 ± 0.3 (width of the top flange), 1 ± 0.1 (width of the top flange lip).
- Left edge: 6 ± 0.2 (width of the left flange), 310 ± 10 (height of the left flange), 6 ± 1 (width of the left flange lip).
- Right edge: 33.5 (width of the right flange), 122 (height of the right flange), 4.3 ± 0.15 (width of the right flange lip).
- Bottom edge: 165 ± 0.2 (width of the bottom flange), 180 ± 0.5 (width of the bottom flange lip).
- Central fan: $\varnothing 92$ (diameter of the fan blade assembly).
- Material: *Tin-plated* (indicated on the left flange).

Max. 209 m³/h

DC centrifugal fans

□ 220 x 56 mm



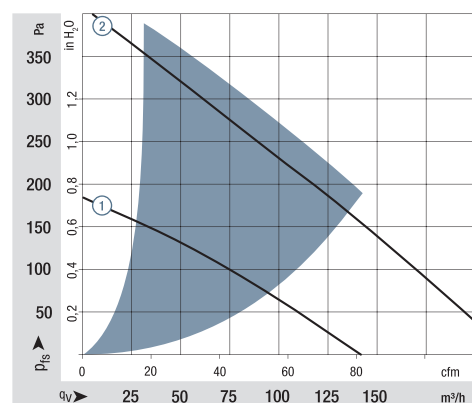
- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
Base plate: Sheet steel
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Connection:** Via single wires AWG 22, TR 64
48 V model: Flat plug
6.3 x 0.8 mm for ground
conductor
- **Highlights:** Backward-curved impeller
- **Weight:** 1.4 kg
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

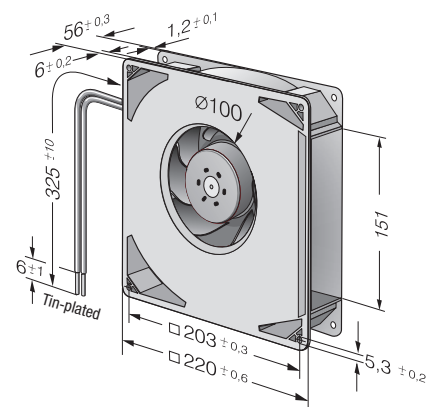
Series RG 160 N

Series RA 160 N														
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearing Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17	Curve
Type		m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RG 160-28/12 NM		139	81	12	7...14	5.6	■	7.5	1 900	-20...+70	80 000 / 40 000	135 000	135 000	①
RG 160-28/12 N		209	123	12	7.5...14	6.6	■	21.0	2 850	-20...+70	70 000 / 35 000	117 500	117 500	②
RG 160-28/14 NM		139	81	24	12...28	5.6	■	7.0	1 900	-20...+70	80 000 / 40 000	135 000	135 000	①
RG 160-28/14 N		209	123	24	12...28	6.6	■	20.0	2 850	-20...+70	70 000 / 35 000	117 500	117 500	②
RG 160-28/18 N		209	123	48	28...60	6.6	■	20.0	2 850	-20...+70	70 000 / 35 000	117 500	117 500	②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 444 m³/h

DC centrifugal fans

□ 220 x 56 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

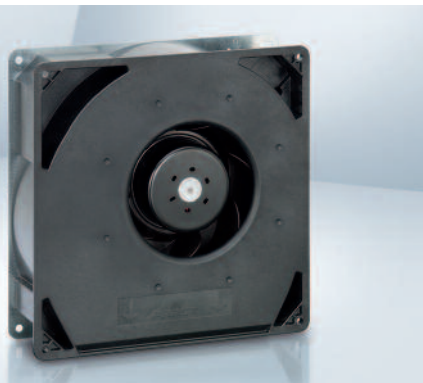
ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



- Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
Base plate: Sheet steel
- Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- Connection:** Via single wires AWG 22, TR 64
48 V model: Flat plug
6.3 x 0.8 mm for ground
conductor
- Highlights:** Smoothly operating 3-phase
fan drive
Backward-curved impeller
- Weight:** 1.4 kg

1) Fiberglass-reinforced plastic

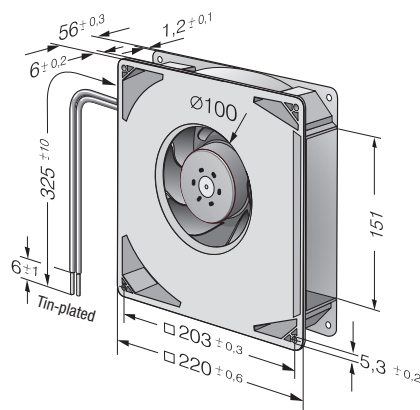
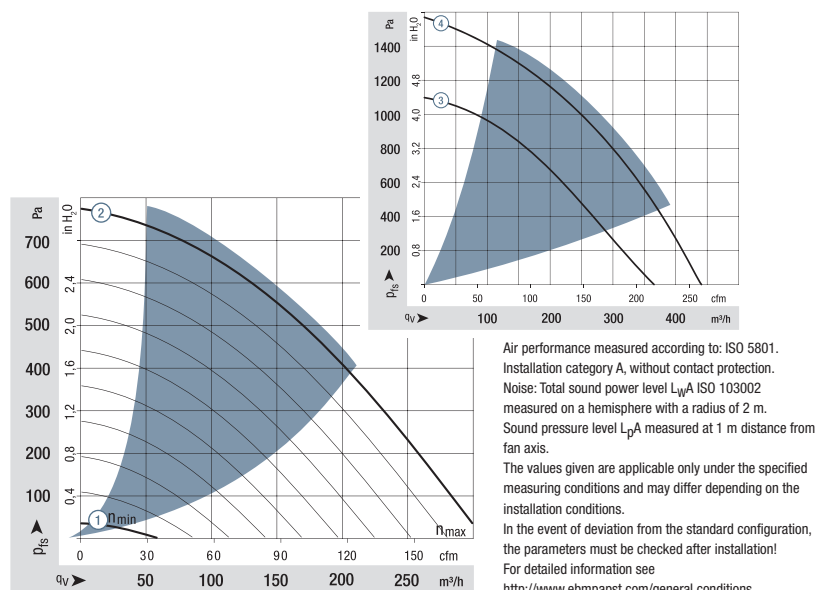
Series RG 160 NTD

Nominal data

Series RG 160 NTD														
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type		m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
Min. ▼ Max.	RG 160-28/14 NTD...	59	34.7	24	16...28	—	■	2.0	800	-20...+60	55 000 / 35 000	92 500		①
		308	181					7.5	64					
	RG 160-28/14 NTD	308	181	24	16...28	7.5	■	64	4 200	-20...+60	55 000 / 35 000	92 500		②
	RG 160-28/14 NTDH	370	218	24	16...28	7.8	■	101	5 000	-20...+60	50 000 / 32 500	85 000		③
Min. ▼ Max.	RG 160-28/18 NTD...	59	34.7	48	38...57	—	■	2.0	800	-20...+70	55 000 / 27 500	92 500		①
		308	181					7.5	59					
	RG 160-28/18 N/2 TDHHP*	444	261	48	36...60	8.5	■	159	6 000	-20...+65	40 000 / 22 500	67 500		④

Subject to change

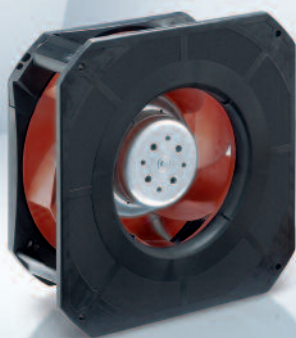
Models RG 160-28/14 NTD... and RG 160-28/18 NTD... are available in customer-specific, custom-developed variants only.
The figures indicated are technically feasible benchmark values.
The fans can be specially adapted to your application with signal outputs and control inputs.
*The specific service life is valid when an external capacitor is wired between the positive and negative wires.
Please note the wiring suggestion.



Max. 930 m³/h
S-Force

DC centrifugal fans

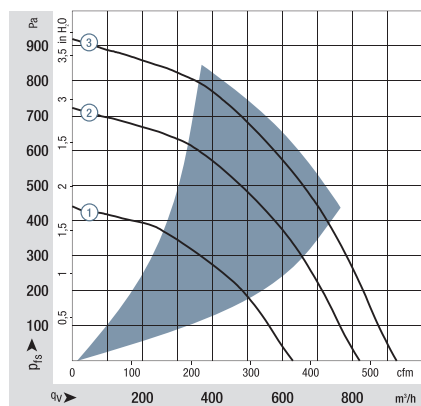
□ 226 x 85 mm



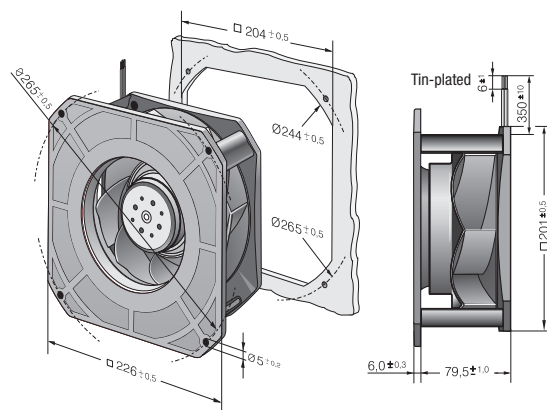
- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
 - **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** via single wires AWG 18, 20 or
AWG 22, TR 64. Speed signal
and control input AWG 22
 - **Highlights:** Highly efficient and smoothly
operating 3-phase fan drive
Backward-curved RadiCal
impeller
 - **Weight:** 1210 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series RG 190 TD													
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■/■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RG 190-39/14/2 TDML0	630	371	24	16...30	7.6	■	54	3 000	-20...+60	55 000 / 35 000	92 500		①
RG 190-39/14/2 TDM0	820	482	24	16...36	7.9	■	113	3 900	-20...+65	52 500 / 30 000	87 500		②
RG 190-39/18/2 TDML0*	630	371	48	36...57	7.6	■	52	3 000	-20...+65	55 000 / 30 000	92 500		①
RG 190-39/18/2 TDM0	820	482	48	36...72	7.9	■	113	3 900	-20...+65	52 500 / 30 000	87 500		②
RG 190-39/18/2 TD0	930	547	48	36...72	8.3	■	140	4 400	-20...+65	40 000 / 22 500	67 500		③
Subject to change * On request	Speed control range from 800 rpm ⁻¹ at 7% PWM up to nominal speed at > 90% PWM. Standstill at 0% PWM, Standstill if control cable is interrupted.												



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 1100 m³/h
S-Force

DC centrifugal fans – RadiCal

□ 270 x 99 mm



- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** via single wires AWG 18, 20 or
AWG 22, TR 64. Speed signal
and control input AWG 22
- **Highlights:** Highly efficient and smoothly
operating 3-phase fan drive
Backward-curved impeller
- **Weight:** 1560 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Humidity protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series RG 220 TD

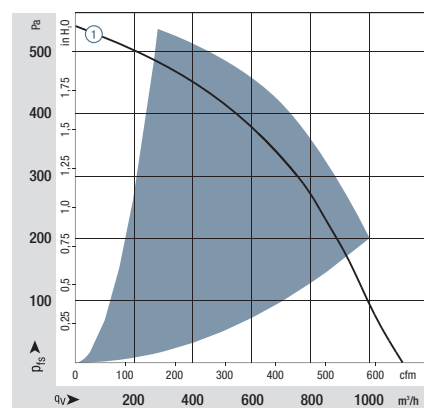
Nominal data

	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RG 220-43/14/2 TDMO	1100	647	24	16...36	7.5	■	101	3 000	-20...+55	55 000 / 40 000	92 500	92 500	①
RG 220-43/18/2 TDMO*	1100	647	48	36...72	7.5	■	101	3 000	-20...+55	55 000 / 40 000	92 500	92 500	①

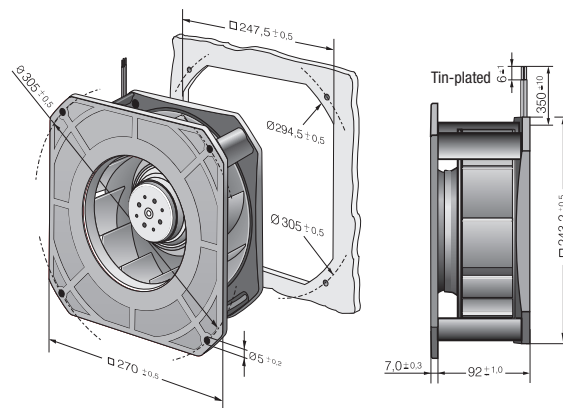
Subject to change

* On request

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.
Standstill at 0% PWM, Standstill if control cable is interrupted.
Further types available on request.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 1450 m³/h
S-Force

DC centrifugal fans – RadiCal

□ 270 x 119 mm



- **Material:** Scroll housing: GRP¹⁾
Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** via single wires AWG 18, 20 or AWG 22, TR 64. Speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive
Backward-curved RadiCal impeller
- **Weight:** 1750 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Humidity protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

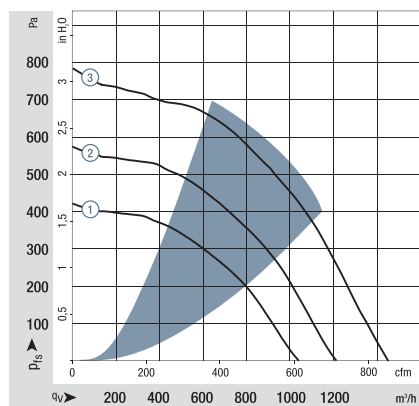
Series RG 225 TD

Nominal data	Air flow		Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
	m³/h	cfm											
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	Curve
RG 225-55/14/2 TDML0	1090	641	24	16...36	7.4	■	80	2 500	-20...+65	52 500 / 30 000		87 500	①
RG 225-55/18/2 TDML0*	1090	641	48	36...72	7.4	■	80	2 500	-20...+65	52 500 / 30 000		87 500	①
RG 225-55/18/2 TDM0	1210	712	48	36...72	7.9	■	116	2 800	-20...+55	55 000 / 40 000		92 500	②
RG 225-55/18/2 TD0	1450	853	48	36...60	8.1	■	192	3 300	-20...+40	30 000 / 30 000		50 000	③

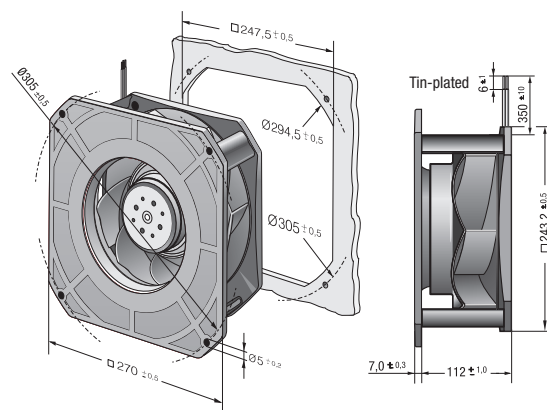
Subject to change

* On request

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM. Standstill at 0% PWM, Standstill if control cable is interrupted.
The specific service life is valid when an external capacitor is wired between the positive and negative wires. Please note the wiring suggestion.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 220 m³/h
S-Force

DC centrifugal fans

Ø 97 x 41 mm



- **Material:** Impeller: Galvanized sheet steel
 - **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** via single wires AWG 18, 20 or AWG 22, TR 64. Speed signal and control input AWG 22
 - **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Forward-curved impeller Fan requires a scroll housing
 - **Weight:** 430 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

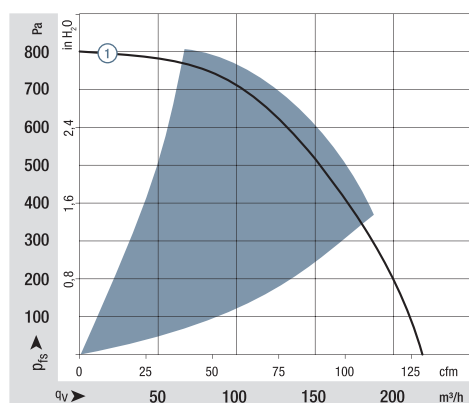
Series RET 97 TD

Nominal data

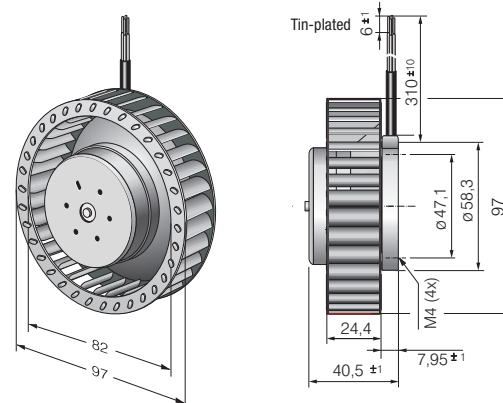
	Air flow		Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RET 97-25/14/2 TDP	220	129	24	16...32	8.1	■	77	6 000	-20...+60	80 000 / 50 000	135 000	135 000	①
RET 97-25/18/2 TDP	220	129	48	36...60	8.1	■	76	6 000	-20...+60	80 000 / 50 000	135 000	135 000	①

Subject to change

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.
Standstill at 0% PWM, maximum speed if control cable is interrupted.
To attain the specified service life, an external capacitor must be wired between the positive and negative wires. Please note the wiring suggestion.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst scroll housing without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 104 m³/h

DC centrifugal fans

Ø 104 x 25 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Backward-curved impeller
- **Weight:** 160 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Degree of protection: IP 54

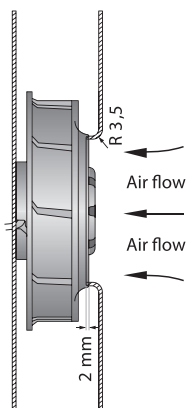
1) Fiberglass-reinforced plastic

Series REF 100

Nominal data

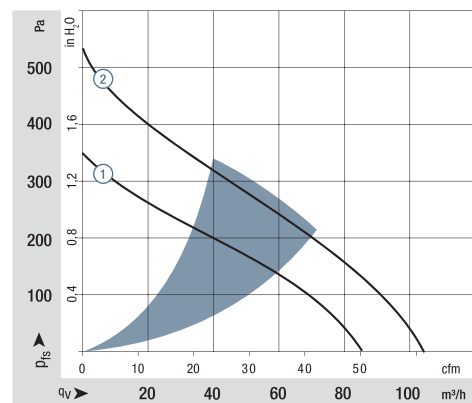
	Air flow		Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
REF 100-11/12	86	50.6	12	8...15	6.3	■	7.5	5 400	-20...+75	80 000 / 30 000	135 000	135 000	①
REF 100-11/14	86	50.6	24	16...30	6.3	■	7.5	5 400	-20...+75	80 000 / 30 000	135 000	135 000	①
REF 100-11/18	86	50.6	48	36...60	6.3	■	8.2	5 400	-20...+75	80 000 / 30 000	135 000	135 000	①
REF 100-11/18 H	104	61.2	48	36...56	6.9	■	14.8	6 700	-20...+70	67 500 / 32 500	115 000	115 000	②

Subject to change

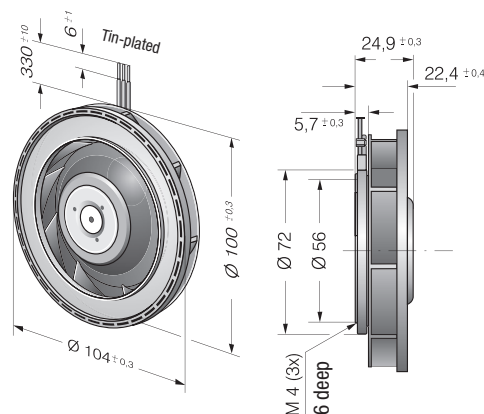


The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 127 x 127 mm.
Cover plate 127 x 127 mm, with an air inlet opening Ø 70 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 190 m³/h

DC centrifugal fans

Ø 101 x 52 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Backward-curved impeller
- **Weight:** 305 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

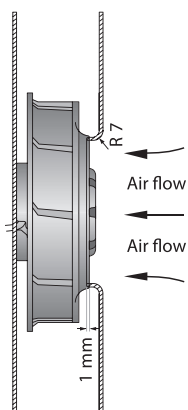
1) Fiberglass-reinforced plastic

Series RER 101 N

Nominal data

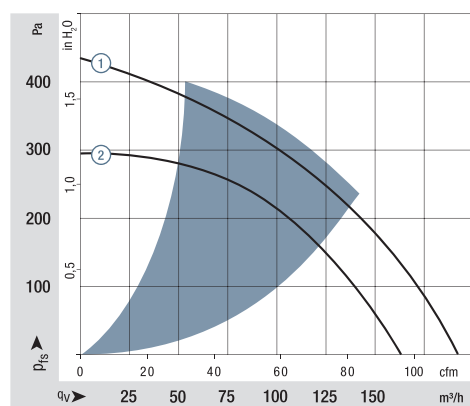
	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■/■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RER 101-36/12 NH	162	95	12	9...13.6	6.9	■	13.0	5 000	-20...+70	65 000 / 32 500	110 000	②	
RER 101-36/12 NHH	190	112	12	9...13.6	7.2	■	20.5	6 000	-20...+70	60 000 / 30 000	102 500	①	
RER 101-36/14 NHH	190	112	24	18...27.2	7.2	■	22.5	6 050	-20...+70	60 000 / 30 000	102 500	①	
RER 101-36/18 NHH	190	112	48	36...60	7.2	■	19.4	5 850	-20...+70	60 000 / 30 000	102 500	①	

Subject to change

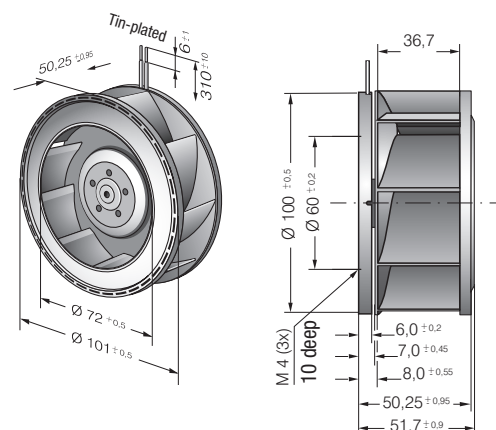


The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 148 x 148 mm.
Cover plate 148 x 148 mm, with an air inlet opening Ø 66 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 390 m³/h
S-Force

DC centrifugal fans

Ø 120 x 54 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** via single wires AWG 18, 20 or
AWG 22, TR 64. Speed signal
and control input AWG 22
- **Highlights:** Highly efficient and smoothly
operating 3-phase fan drive
Backward-curved impeller
- **Weight:** 430 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

1) Fiberglass-reinforced plastic

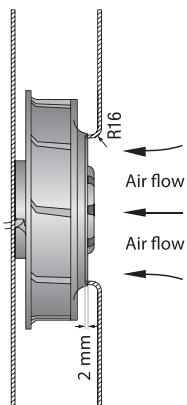
Series RER 120 TD

Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours		
RER 120-26/14/2 TDMP*	320	188	24	16...32	tbd	■	51	5 200	-20...+60	60 000 / 37 500	102 500	①		
RER 120-26/14/2 TDP	377	222	24	16...32	8.2	■	78	6 100	-20...+60	55 000 / 35 000	92 500	②		
RER 120-26/18/2 TDMP*	320	188	48	36...60	tbd	■	51	5 200	-20...+60	57 500 / 35 000	97 500	①		
RER 120-26/18/2 TDP	390	230	48	36...60	8.3	■	92	6 300	-20...+60	50 000 / 30 000	85 000	③		

Subject to change

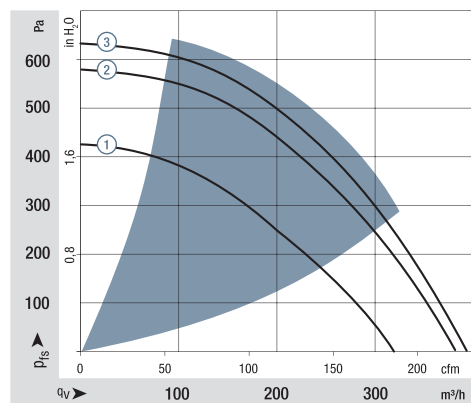
* On request

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM. Standstill at 0% PWM, maximum speed if control cable is interrupted.
The specific service life is valid when an external capacitor is wired between the positive and negative wires. Please note the wiring suggestion.

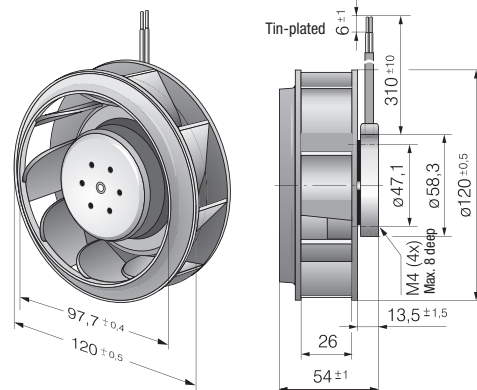


The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 140 x 140 mm.
Cover plate 140 x 140 mm, with an air inlet opening Ø 94.4 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>





Max. 250 m³/h

DC centrifugal fans

Ø 120 mm



- **Material:** Impeller: PA 6.6 plastic, fiberglass-reinforced
Rotor: Galvanized
- **Number of blades:** 9
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 20
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data

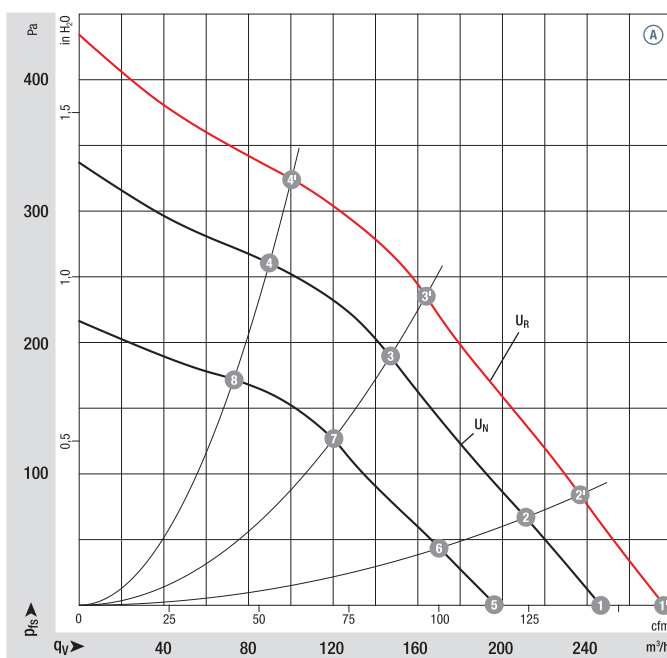
Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m ³ /h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Admissible amb. temp. °C	Technical features and connection diagram
R1G 120	M1G 045-BE	Ⓐ	24	16-28	250	4060	26	1.20	62	-25..+50	p. 259 / G)
R1G 120	M1G 045-BE	Ⓐ	48	36-57	250	4060	26	0.60	62	-25..+50	p. 259 / G)

Subject to change

Curves:

U_N = nominal
voltage
(24 V / 48 V)

U_R = over-
voltage
(28 V / 57 V)



	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	4520	36	65	—
Ⓐ 2'	4500	36	64	27
Ⓐ 3'	4540	36	61	45
Ⓐ 4'	4750	32	64	39
Ⓐ 1	4060	26	62	—
Ⓐ 2	4000	26	61	27
Ⓐ 3	4050	26	58	45
Ⓐ 4	4200	23	61	39
Ⓐ 5	3270	14	56	—
Ⓐ 6	3250	14	55	27
Ⓐ 7	3280	14	53	45
Ⓐ 8	3400	13	56	39

Air performance measured according to: ISO 5801, installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels: LWA according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight
centrifugal fans



Centrifugal fans

kg

Inlet ring
(long)

R1G 120-AD13 -02

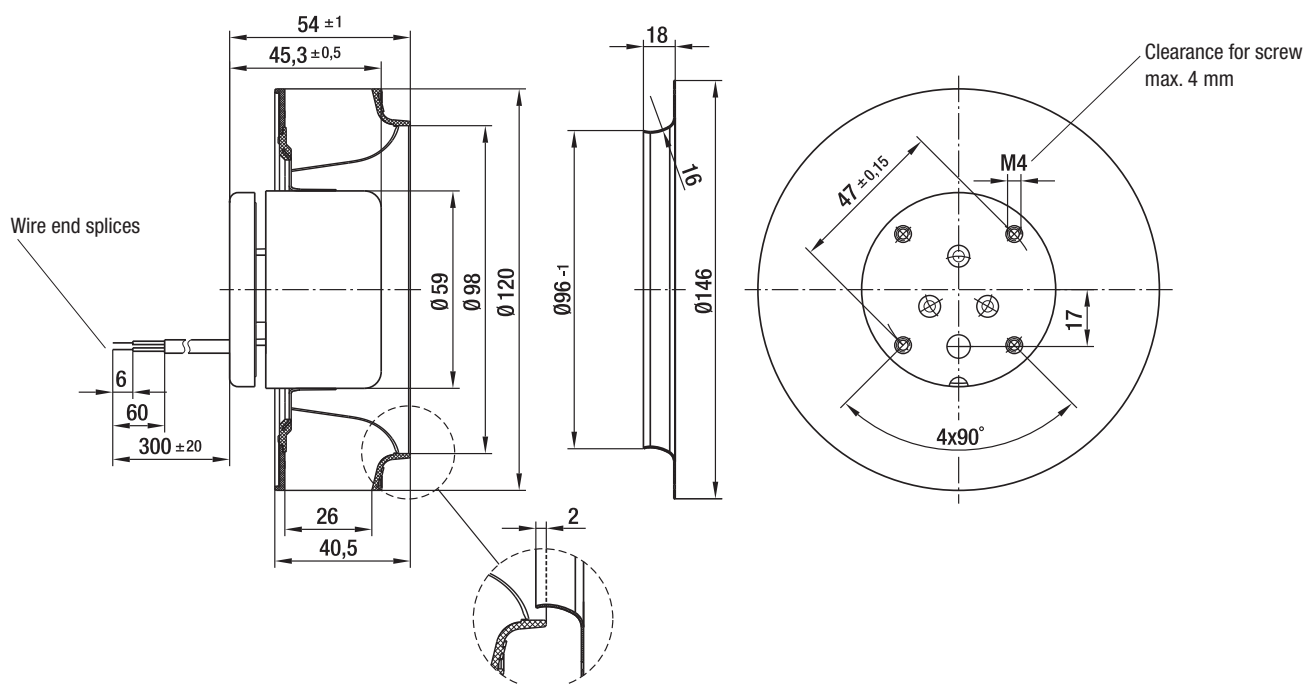
0.5

96120-2-4013

R1G 120-AD11 -02

0.5

96120-2-4013



Max. 166 m³/h

DC centrifugal fans

Ø 138 x 35 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Backward-curved impeller
- **Weight:** 320 g

- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

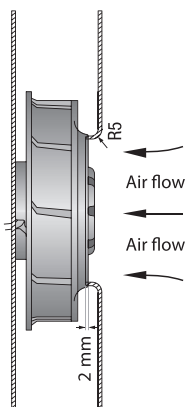
1) Fiberglass-reinforced plastic

Series RER 125 N

Nominal data

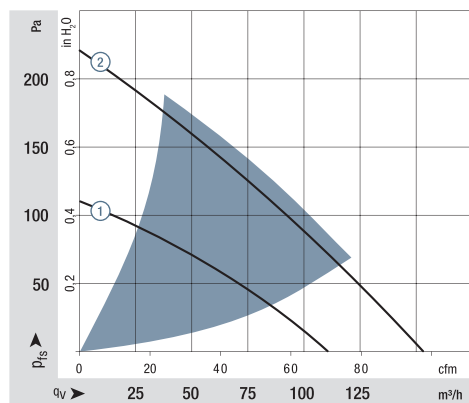
	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RER 125-19/12 N	110	64.7	12	7...15	5.7	■	4.6	2 650	-30...+75	62 500 / 27 500	105 000	105 000	①
RER 125-19/14 N	110	64.7	24	12...28	5.7	■	4.3	2 650	-30...+75	62 500 / 27 500	105 000	105 000	①
RER 125-19/14 NH	166	97.7	24	12...28	7.0	■	13.0	4 000	-20...+70	55 000 / 27 500	92 500	92 500	②
RER 125-19/18 N	110	64.7	48	36...56	5.7	■	4.2	2 650	-30...+75	62 500 / 27 500	105 000	105 000	①

Subject to change



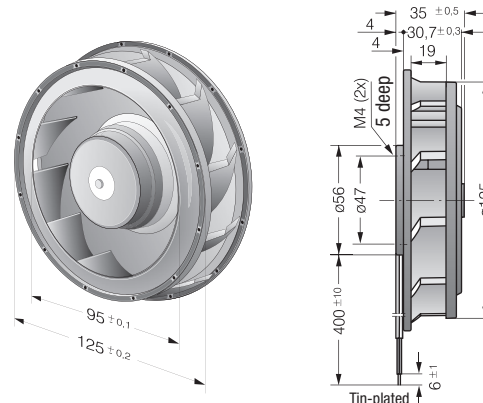
The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 220 x 220 mm.
Cover plate 220 x 220 mm, with an air inlet opening Ø 86 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{pA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 565 m³/h
S-Force

DC centrifugal fans

Ø 133 x 91 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** via single wires AWG 18, 20 or AWG 22, TR 64. Speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Backward-curved impeller
- **Weight:** 890 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

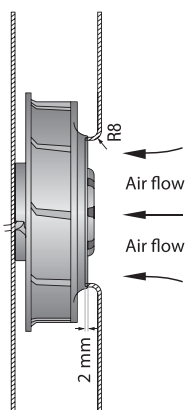
Series RER 133 TD

Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RER 133-41/14/2 TDMP	460	271	24	16...30	tbd	■	58	5 000	-20...+65	72 500 / 40 000	122 500	①	
RER 133-41/14/2 TDP*	565	332	24	16...36	tbd	■	90	6 000	-20...+65	70 000 / 37 500	117 500	②	
RER 133-41/18/2 TDMP*	460	271	48	36...57	tbd	■	50	5 000	-20...+65	72 500 / 40 000	122 500	①	
RER 133-41/18/2 TDP	565	332	48	36...72	8.2	■	87	6 000	-20...+65	70 000 / 37 500	117 500	②	

Subject to change

* On request

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.
Standstill at 0% PWM, maximum speed if control cable is interrupted.



The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

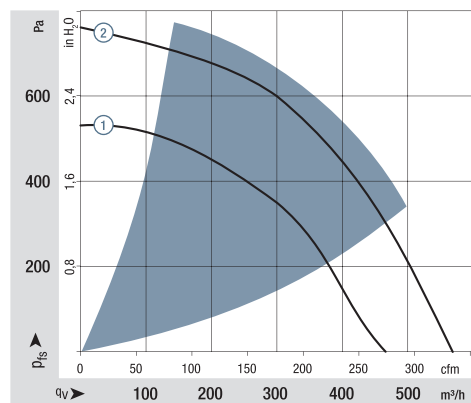
The stated air flow and sound level were recorded under the following measurement parameters:

Centrifugal fan mounted on a foundation plate

140 x 140 mm.

Cover plate 140 x 140 mm, with an air inlet opening

Ø 87 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.

Noise: Total sound power level L_{WA}

ISO 103002 measured on a hemisphere with

a distance of 2 m;

Sound pressure level L_{pA} measured at 1 m

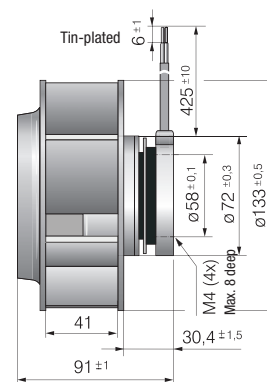
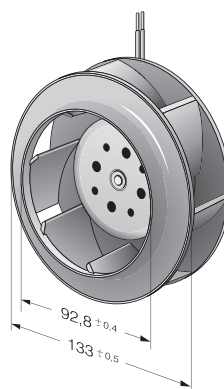
distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. **255** m³/h

DC centrifugal fans

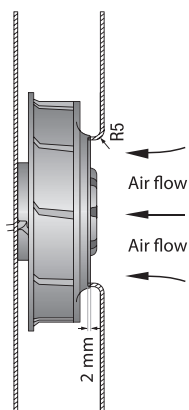
Ø 165 x 51 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake,
Centrifugal: Exhaust
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Backward-curved impeller
- **Weight:** 590 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

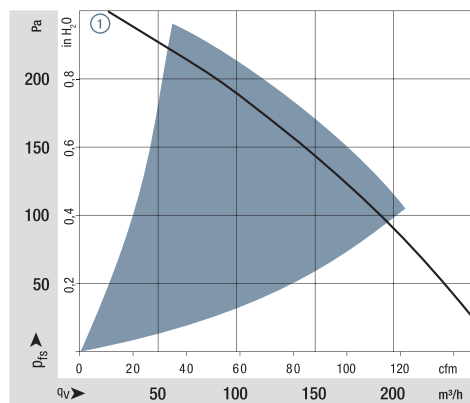
Series RER 160 N													
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinterc sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ /PC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
RER 160-28/12 N	255	150	12	7...14	6.4	■	19.0	3 000	-20...+70	75 000 / 37 500	127 500	①	
RER 160-28/14 N	255	150	24	12...28	6.4	■	19.0	3 000	-20...+70	75 000 / 37 500	127 500	①	
RER 160-28/18 N	255	150	48	28...60	6.4	■	19.0	3 000	-20...+70	75 000 / 37 500	127 500	①	
Subject to change													



The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:

- Centrifugal fan mounted on a foundation plate 260 x 260 mm.
- Cover plate 260 x 260 mm, with an air inlet opening $\varnothing$ 100 mm, arranged concentrically to the impeller.



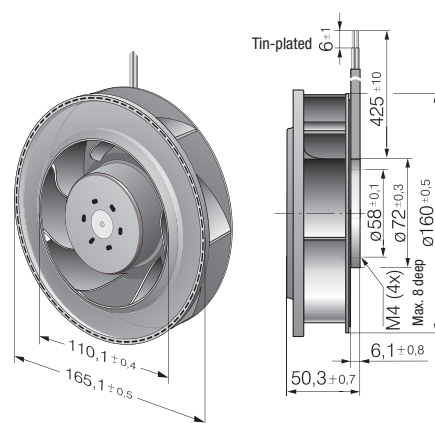
Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without
contact protection.

Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{pA} measured at 1 m distance
from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see http://www.ebmpapst.com/general_conditions



Max. 360 m³/h
S-Force

DC centrifugal fans

Ø 165 x 51 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** via single wires AWG 22, TR 64
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Backward-curved impeller
- **Weight:** 590 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Humidity protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series RER 160 NTD

Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	②
RER 160-28/14 NTD...	360	211	24	16...28	7.4	■	51	4 200	-20...+60	55 000 / 27 500	92 500	92 500	②
RER 160-28/18 NTD...	360	211	48	38...57	7.4	■	48	4 200	-20...+70	55 000 / 27 500	92 500	92 500	①

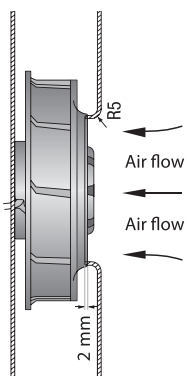
Subject to change

Model RER 160-28/18 NTD... is available in customer-specific, custom-developed variant only.

The figures indicated are technically feasible benchmark values. The fans can be specially adapted to your application with signal outputs and control inputs.

* The specific service life is valid when an external capacitor is wired between the positive and negative wires.

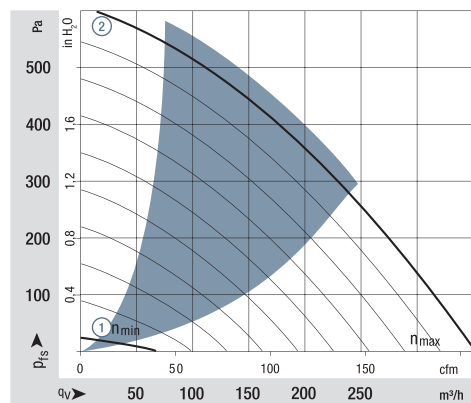
Please note the wiring suggestion.



The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 260 x 260 mm.

Cover plate 260 x 260 mm, with an air inlet opening Ø 100 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.

Installation category A, with ebm-papst inlet ring without contact protection.

Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m;

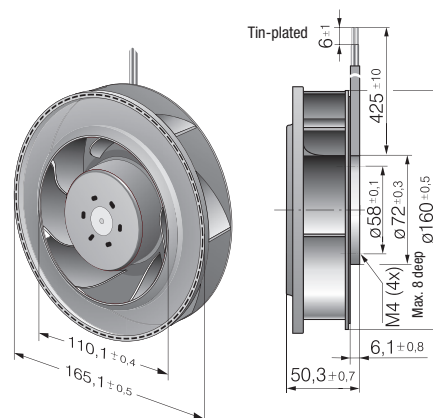
Sound pressure level L_{pA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 800 m³/h
S-Force

DC centrifugal fans

Ø 175 x 55 mm



- **Material:** Impeller: Galvanized sheet steel
 - **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** via single wires AWG 18, 20 or AWG 22, TR 64. Speed signal and control input AWG 22
 - **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Backward-curved impeller
 - **Weight:** 930 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Humidity protection
 - Degree of protection: IP 54

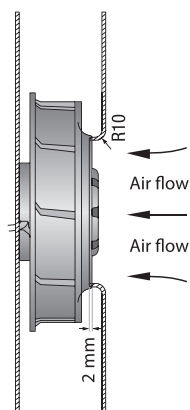
Series RER 175 TD

Nominal data

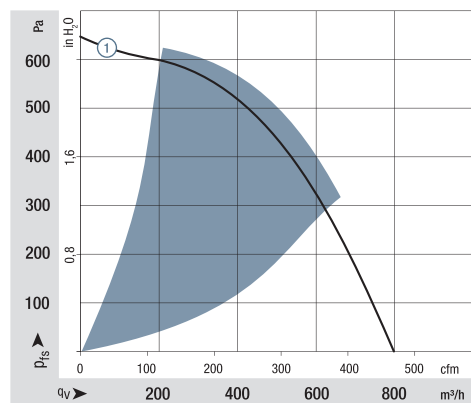
	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■/■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	①
REF 175-30/18/2 TDP	800	470	48	36 ... 72	8.3	■	144	4 400	-20...+60	65 000 / 37 500	110 000	110 000	①

Subject to change

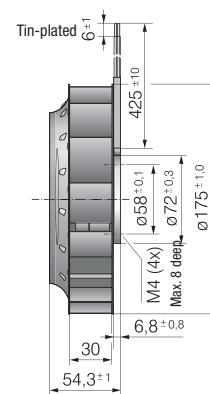
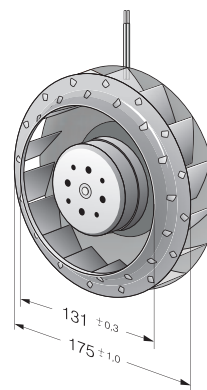
Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.
Standstill at 0% PWM, maximum speed if control cable is interrupted.



The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.
The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 180 x 180 mm.
Cover plate 180 x 180 mm, with an air inlet opening Ø 125.5 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 980 m³/h
S-Force

DC centrifugal fans

Ø 175 x 69 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Backward-curved impeller
- **Weight:** 775 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series RER 175 TD

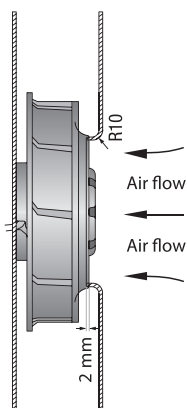
Nominal data

	Air flow		Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RER 175-42/14/2 TDMLP	600	353	24	16...30	7.3	■	48	3 400	-20...+65	72 500 / 40 000	122 500	①	
RER 175-42/14/2 TDMP	865	509	24	16...36	8.2	■	110	4 800	-20...+65	70 000 / 40 000	117 500	②	
RER 175-42/18/2 TDMLP	600	353	48	36...57	7.3	■	46	3 400	-20...+65	72 500 / 40 000	122 500	①	
RER 175-42/18/2 TDMP*	865	509	48	36...72	8.2	■	110	4 800	-20...+65	70 000 / 40 000	117 500	②	
RER 175-42/18/2 TDP	980	577	48	36...72	8.5	■	166	5 400	-20...+65	60 000 / 32 500	102 500	③	

Subject to change

* On request

Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.
Standstill at 0% PWM, maximum speed if control cable is interrupted.

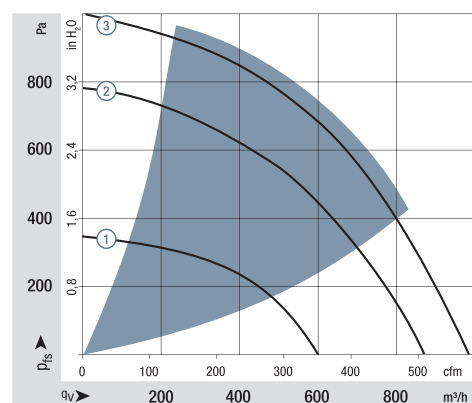


The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

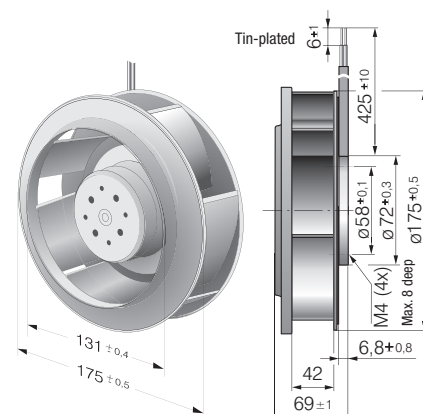
The stated air flow and sound level were recorded under the following measurement parameters:

Centrifugal fan mounted on a foundation plate 180 x 180 mm.

Cover plate 180 x 180 mm, with an air inlet opening Ø 125.5 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 970 m³/h
S-Force

DC centrifugal fans – RadiCal

Ø 190 x 69 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Backward-curved RadiCal impeller
- **Weight:** 870 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

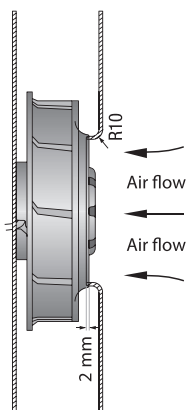
Series RER 190 TD

Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VDC	VDC	Bel(A)	■/■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RER 190-39/14/2 TDMLO	650	382	24	16...30	7.6	■	58	3 000	-20...+60	55 000 / 35 000	92 500	①	
RER 190-39/14/2 TDMO	860	506	24	16...36	7.9	■	110	3 900	-20...+65	52 500 / 30 000	87 500	②	
RER 190-39/18/2 TDMLO*	650	382	48	36...57	7.6	■	56	3 000	-20...+65	55 000 / 30 000	92 500	①	
RER 190-39/18/2 TDMO*	860	506	48	36...72	7.9	■	105	3 900	-20...+65	52 500 / 30 000	87 500	②	
RER 190-39/18/2 TDO	970	571	48	36...72	8.3	■	148	4 400	-20...+65	40 000 / 22 500	67 500	③	

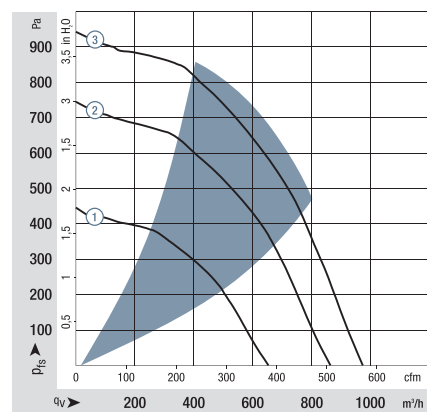
Subject to change

* On request

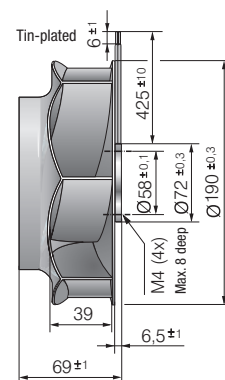
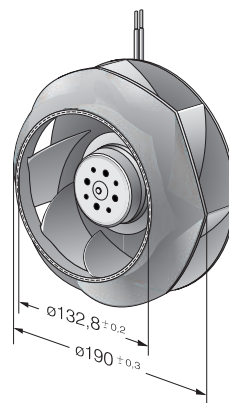
Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.
Standstill at 0% PWM, Standstill if control cable is interrupted.



The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.
The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 195 x 195 mm.
Cover plate 195 x 195 mm, with an air inlet opening Ø 125.5 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA}
ISO 103002 measured on a hemisphere with a distance of 2 m;
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>

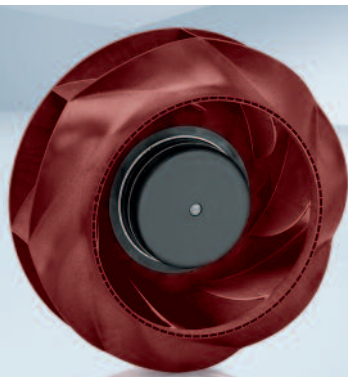




Max. 930 m³/h

DC centrifugal fans – RadiCal

Ø 190 mm



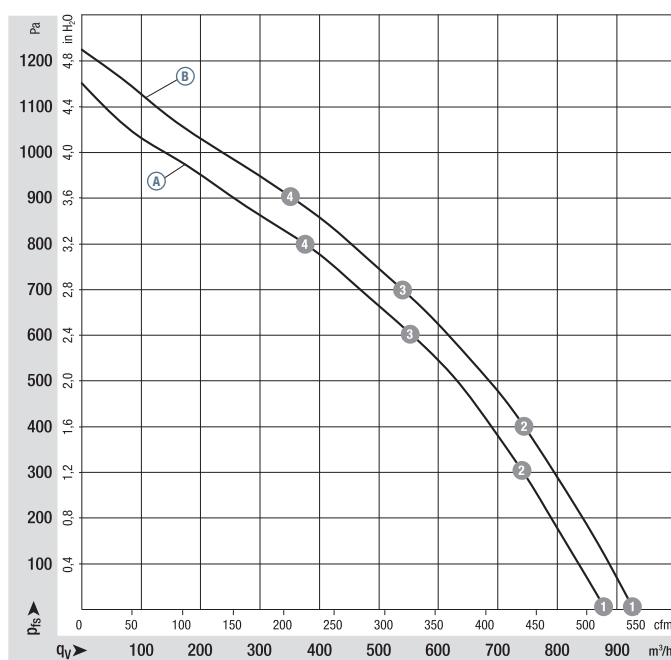
- **Material:** Impeller: PA plastic
Rotor: Painted black
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m ³ /h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Admissible amb. temp. °C	Technical features and connection diagram
R3G 190	M3G 074-CF	Ⓐ	24	16-28	880	4570	180	7.50	76	-25..+60	p. 262 / J5)
R3G 190	M3G 074-CF	Ⓑ	48	36-57	930	4800	192	4.00	76	-25..+60	p. 262 / J5)

Subject to change

Curves:



	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ ①	4570	180	7.50	84
Ⓐ ②	4525	188	7.83	79
Ⓐ ③	4435	199	8.34	77
Ⓐ ④	4520	191	7.96	81
Ⓑ ①	4800	192	4.00	84
Ⓑ ②	4690	212	4.41	80
Ⓑ ③	4640	221	4.60	79
Ⓑ ④	4740	205	4.28	81

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels: LWA according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general conditions>

- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight
centrifugal fans



Centrifugal fans

kg

Inlet ring

R3G 190-RN38 -01

1.9

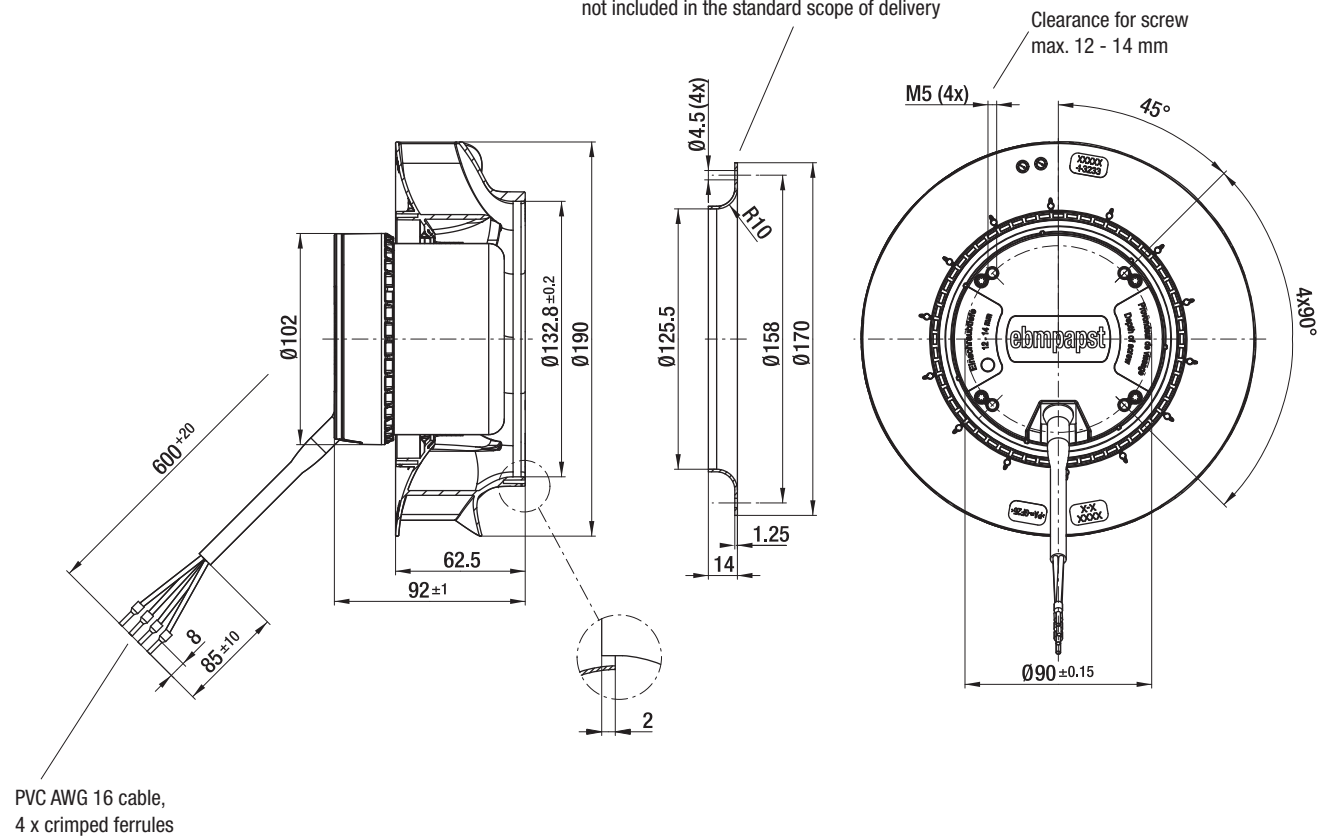
09576-2-4013

R3G 190-RN99 -02

1.9

09576-2-4013

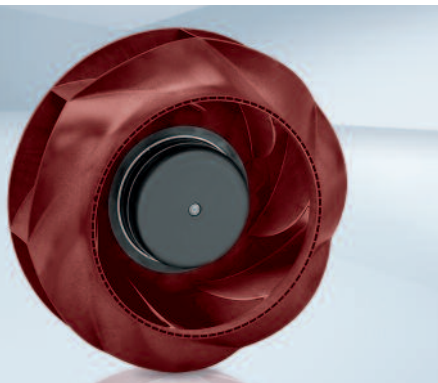
Accessory part: Inlet ring 09576-2-4013
not included in the standard scope of delivery



Max. 1215 m³/h

DC centrifugal fans – RadiCal

Ø 220 mm

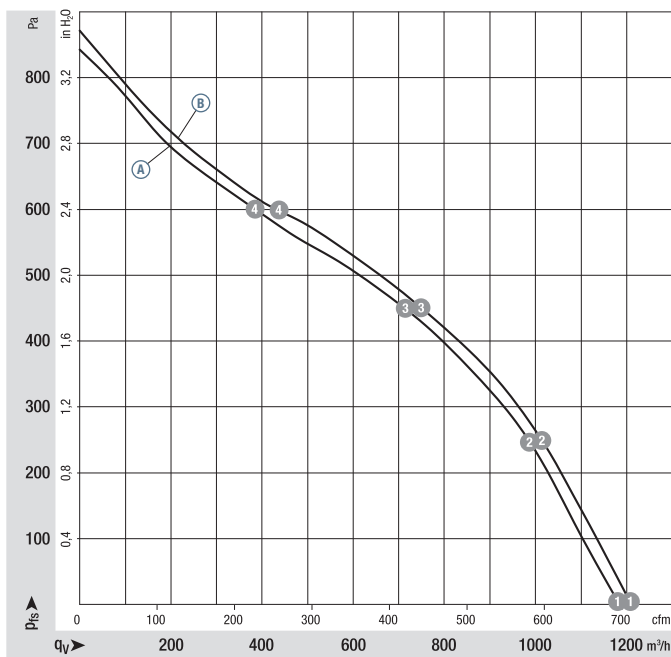


- **Material:** Impeller: PA plastic
Rotor: Painted black
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m³/h	rpm ⁻¹	W	A	dB(A)	°C	
R3G 220	M3G 074-CF	Ⓐ	24	16-28	1200	3460	157	6.50	73	-25...+60	p. 262 / J5)
R3G 220	M3G 074-CF	Ⓑ	48	36-57	1215	3510	160	3.40	73	-25...+60	p. 262 / J5)

Subject to change

Curves:



	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ ①	3460	157	6.50	81
Ⓐ ②	3420	171	7.11	77
Ⓐ ③	3360	182	7.59	74
Ⓐ ④	3455	168	6.97	79
Ⓑ ①	3510	160	3.40	81
Ⓑ ②	3450	168	3.50	77
Ⓑ ③	3385	178	3.71	74
Ⓑ ④	3460	167	3.47	79

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels: LWA according to ISO 13347, L_{WA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight
centrifugal fans



Centrifugal fans

kg

Inlet ring

R3G 220-RN12 -01

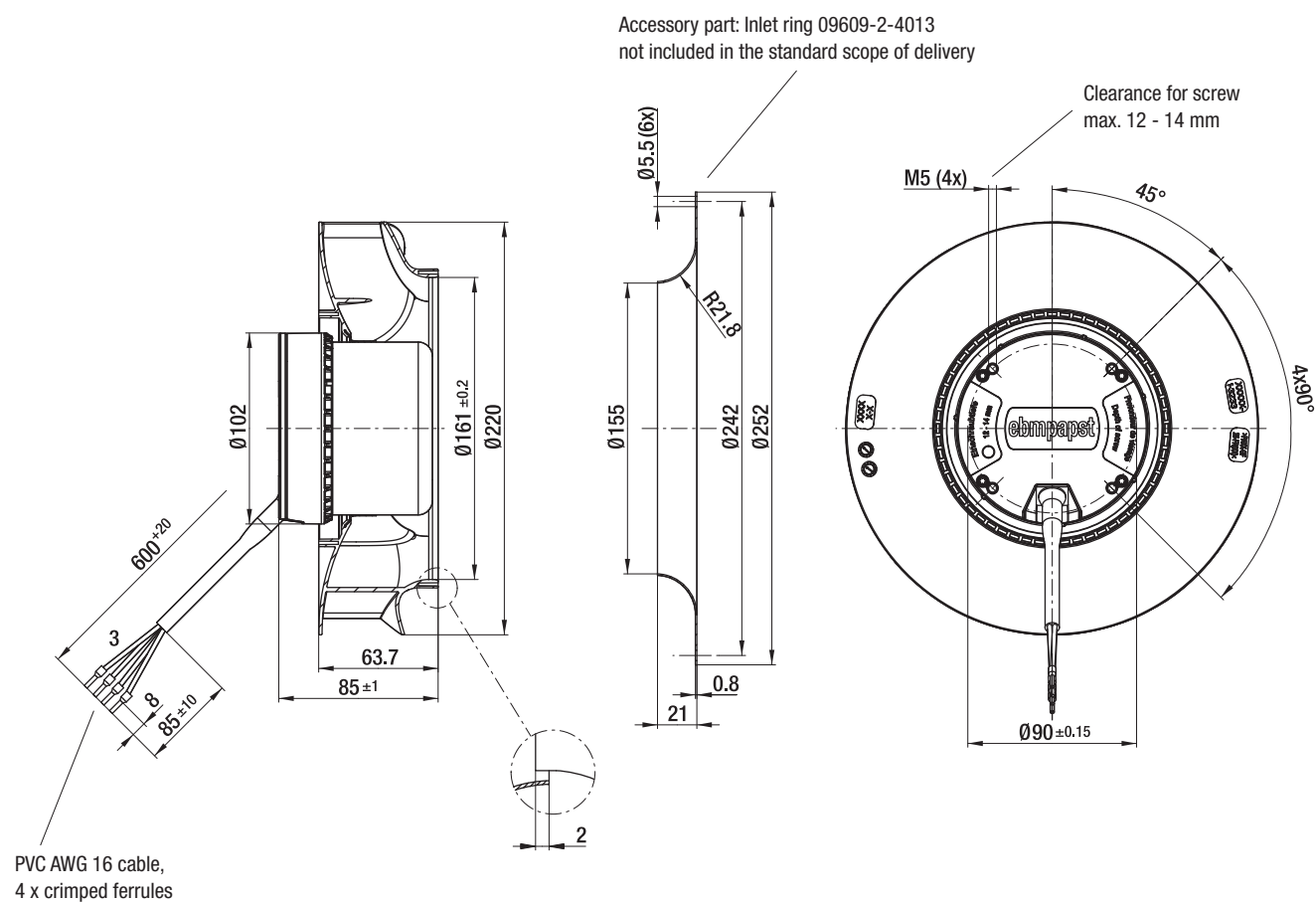
1.9

09609-2-4013

R3G 220-RNB6 -02

1.9

09609-2-4013



Max. 1250 m³/h
S-Force

DC centrifugal fans – RadiCal

Ø 221 x 71 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Backward-curved impeller
- **Weight:** 940 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Humidity protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

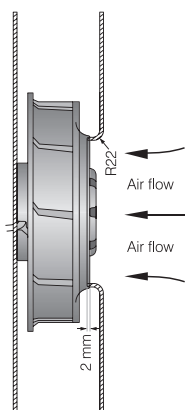
Series RER 220 TD

RER 220-43														
Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ (40 °C) see page 17	Curve
Type		m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RER 220-43/14/2 TDM0*		1063	625	24	16...36	tbd	■	110	3 000	-20...+55	65 000 / 45 000	110 000	110 000	①
RER 220-43/18/2 TDM0		1063	625	48	36...72	tbd	■	110	3 000	-20...+55	65 000 / 45 000	110 000	110 000	①
RER 220-43/18/2 TDO		1250	735	48	36...72	tbd	■	160	3 500	-20...+55	60 000 / 42 500	102 500	102 500	②

Subject to change

* On request

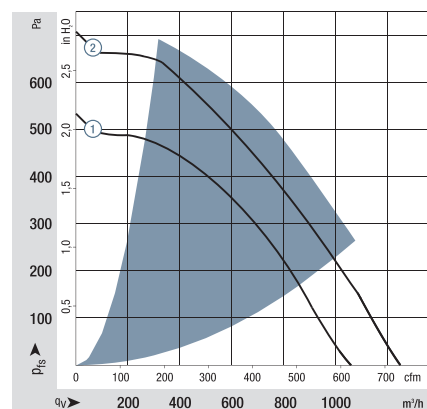
Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.
Standstill at 0% PWM, Standstill if control cable is interrupted.



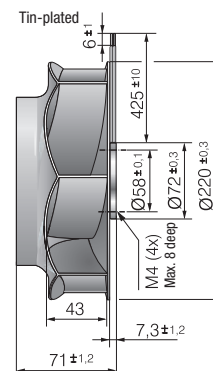
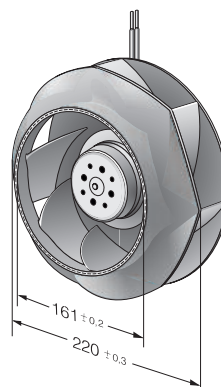
The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:

Centrifugal fan mounted on a foundation plate 230 x 230 mm.
Cover plate 230 x 230 mm, with an air inlet opening Ø 155 mm, arranged concentrically to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LWA ISO 103002 measured on a hemisphere with a distance of 2 m.
Sound pressure level LpA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 1600 m³/h
S-Force

DC centrifugal fans

Ø 225 x 99 mm



- **Material:** Impeller: GRP¹⁾
- **Direction of air flow:** Axial: Intake, Centrifugal: Exhaust
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 18, 20 or AWG 22, TR 64, speed signal and control input AWG 22
- **Highlights:** Highly efficient and smoothly operating 3-phase fan drive Backward-curved impeller
- **Weight:** 1030 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Multi-option control input
 - Humidity protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series RER 225 TD

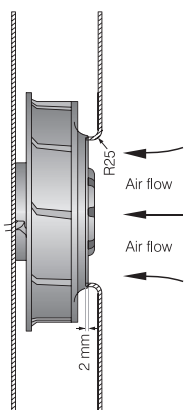
Nominal data

Series RER 225 TD													
Nominal data	Air flow	Air flow	Nominal voltage	Voltage range	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VDC	VDC	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
RER 225-63/18/2 TDMLO	1190	700	48	36...72	7.2	■	77	2 500	-20...+55	70 000 / 50 000	122 500	87 500	①
RER 225-63/18/2 TDMO	1340	789	48	36...72	7.8	■	108	2 800	-20...+55	55 000 / 40 000	92 500	122 500	②
RER 225-63/18/2 TDO	1600	941	48	36...72	8.1	■	163	3 300	-20...+55	52 500 / 37 500	87 500	122 500	③

Subject to change

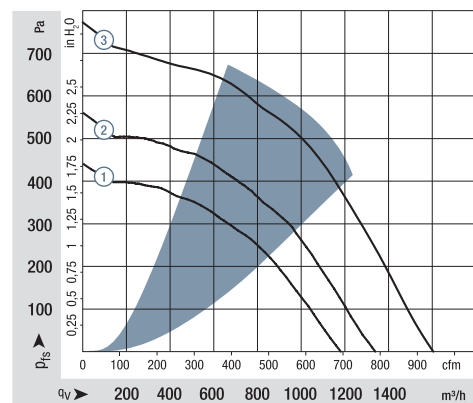
Speed control range from 800 rpm⁻¹ at 7% PWM up to nominal speed at > 90% PWM.

Standstill at 0% PWM, Type O: Standstill if control cable is interrupted. Type P: Maximum speed if control cable is interrupted.

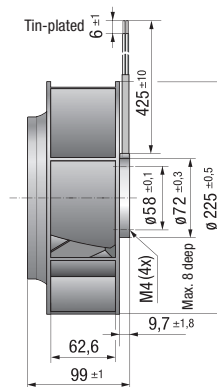
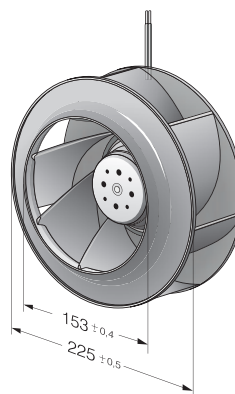


The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions.

The stated air flow and sound level were recorded under the following measurement parameters:
Centrifugal fan mounted on a foundation plate 230 x 230 mm.
Cover plate 230 x 230 mm, with an air inlet opening Ø 146 mm, arranged concentrically to the impeller.



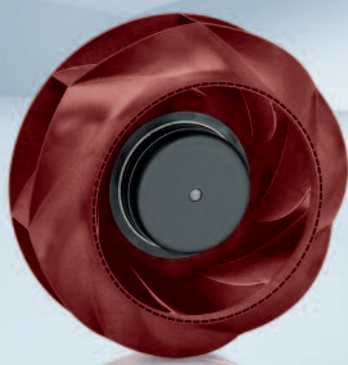
Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level LWA ISO 103002 measured on a hemisphere with a distance of 2 m.
Sound pressure level LpA measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 1340 m³/h

DC centrifugal fans – RadiCal

Ø 225 mm



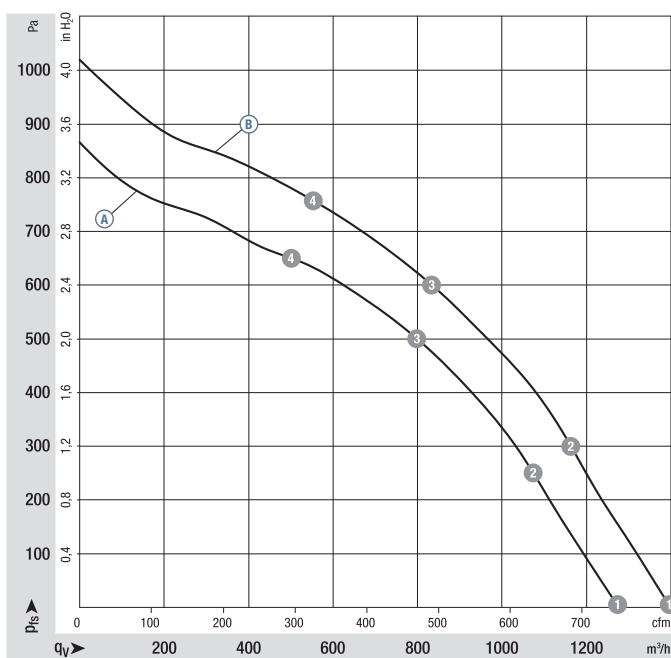
- **Material:** Impeller: PA plastic
Rotor: Painted black
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m³/h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Admissible amb. temp. °C	Technical features and connection diagram
R3G 225	M3G 074-CF	Ⓐ	24	16-28	1300	3270	205	8.50	75	-25...+60	p. 262 / J5)
R3G 225	M3G 074-CF	Ⓑ	48	36-57	1340	3400	230	4.80	73	-25...+60	p. 262 / J5)

Subject to change

Curves:



	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ ①	3270	205	8.50	81
Ⓐ ②	3200	208	8.66	78
Ⓐ ③	3185	213	8.88	74
Ⓐ ④	3260	194	8.02	77
Ⓑ ①	3400	230	4.80	83
Ⓑ ②	3440	257	5.35	80
Ⓑ ③	3435	260	5.43	76
Ⓑ ④	3500	239	4.97	78

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{PA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general conditions>

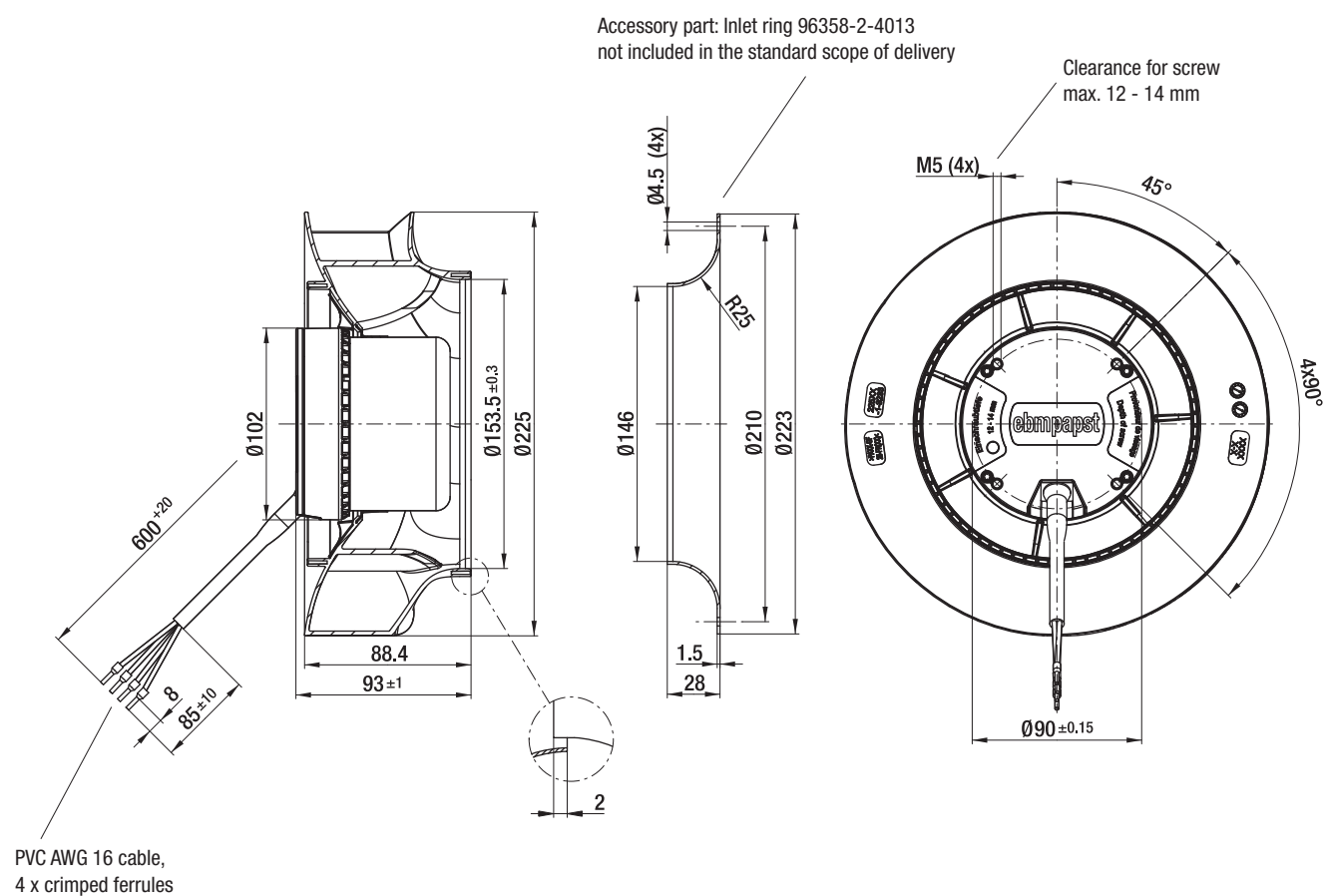
- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight centrifugal fans



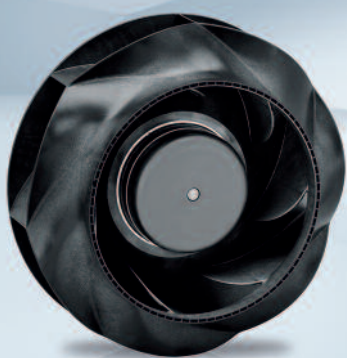
Centrifugal fans	kg	Inlet ring
R3G 225-RN28 -01	2.1	96358-2-4013
R3G 225-RN18 -02	2.1	96358-2-4013



Max. 1640 m³/h

DC centrifugal fans – RadiCal

Ø 250 mm

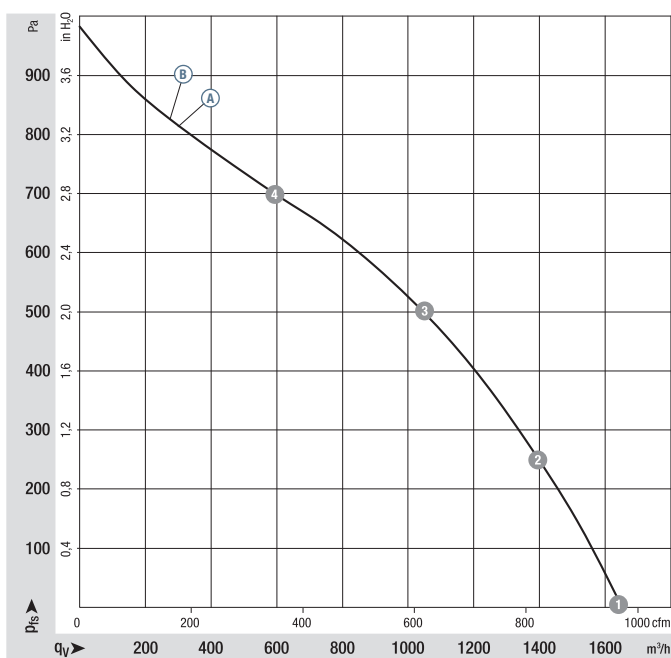


- **Material:** Impeller: PA plastic
Rotor: Painted black
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m³/h	rpm ⁻¹	W	A	dB(A)	°C	
R3G 250	M3G 074-CF	Ⓐ	24	16-28	1505	2850	175	7.20	73	-25...+60	p. 262 / J5)
R3G 250	M3G 074-CF	Ⓑ	48	36-57	1640	3100	230	4.80	73	-25...+60	p. 262 / J5)

Subject to change

Curves:



Air performance measured according to: ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{PA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight
centrifugal fans



Centrifugal fans

kg

Inlet ring

R3G 250-RN46 -01

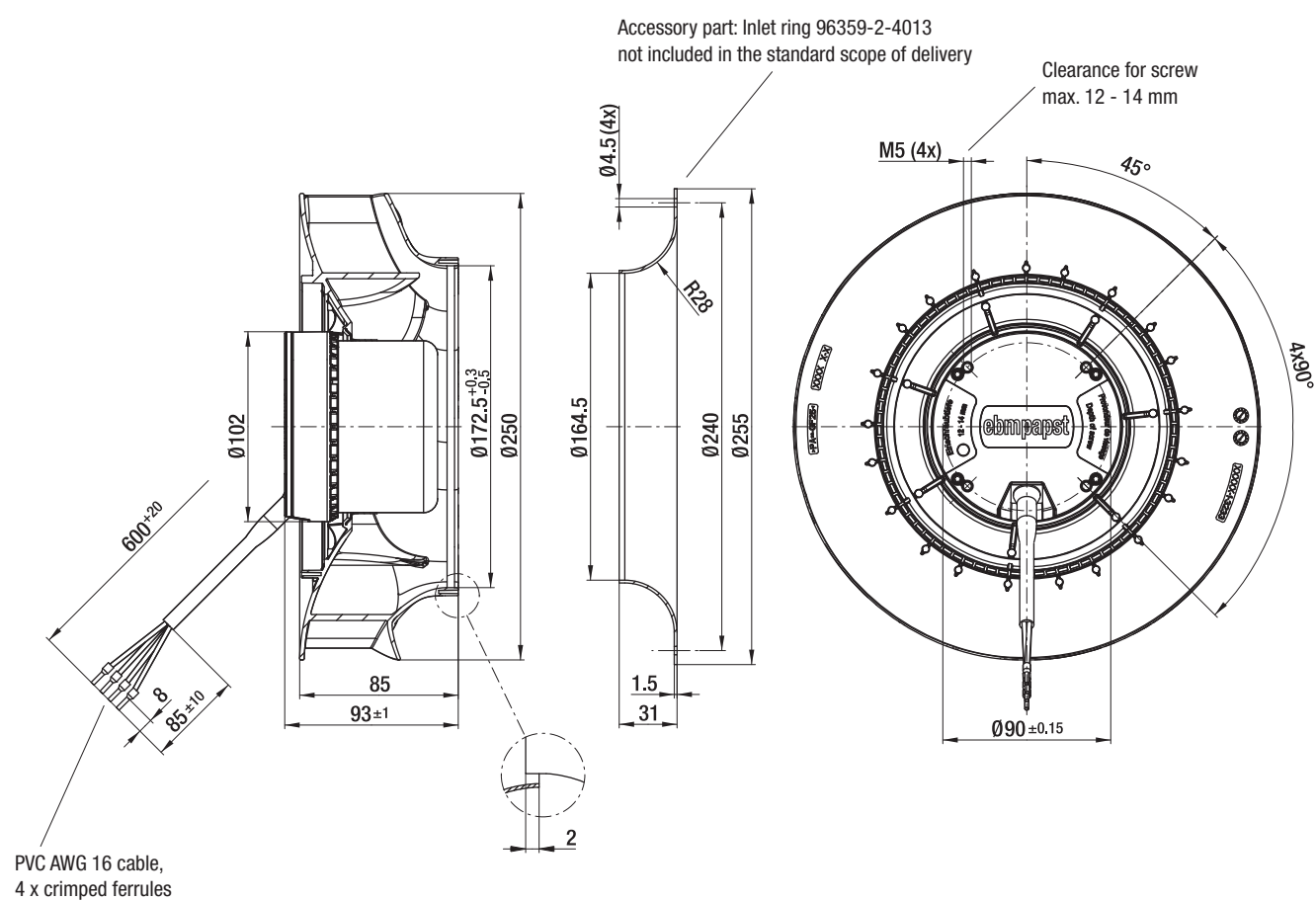
2.1

96359-2-4013

R3G 250-RN85 -02

2.1

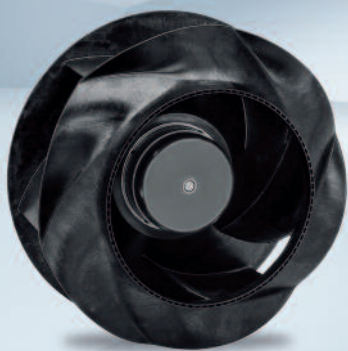
96359-2-4013



Max. 2190 m³/h

DC centrifugal fans – RadiCal

Ø 280 mm



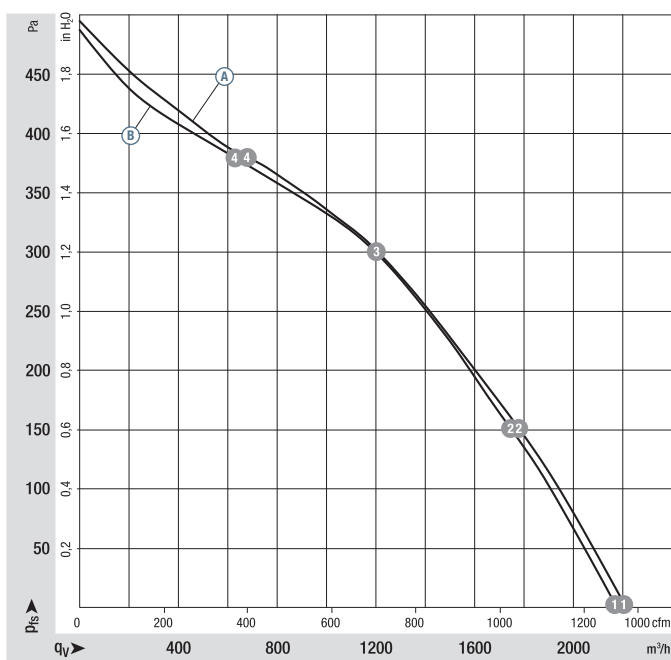
- **Material:** Impeller: PP plastic
Rotor: Painted black
- **Number of blades:** 6
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m³/h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Admissible amb. temp. °C	Technical features and connection diagram
R3G 280	M3G 074-CF	Ⓐ	24	16-28	2190	1900	142	5.90	67	-25...+60	p. 262 / J5)
R3G 280	M3G 074-CF	Ⓑ	48	36-57	2160	1910	140	2.90	67	-25...+60	p. 262 / J5)

Subject to change

Curves:



	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ ①	1900	142	5.90	74
Ⓐ ②	1870	162	6.76	67
Ⓐ ③	1840	173	7.21	64
Ⓐ ④	1905	153	6.36	68
Ⓑ ①	1910	140	2.90	74
Ⓑ ②	1845	158	3.30	67
Ⓑ ③	1830	163	3.40	64
Ⓑ ④	1900	141	2.93	68

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{PA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general conditions>

- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight
centrifugal fans



Centrifugal fans

kg

Inlet ring

R3G 280-RN30 -01

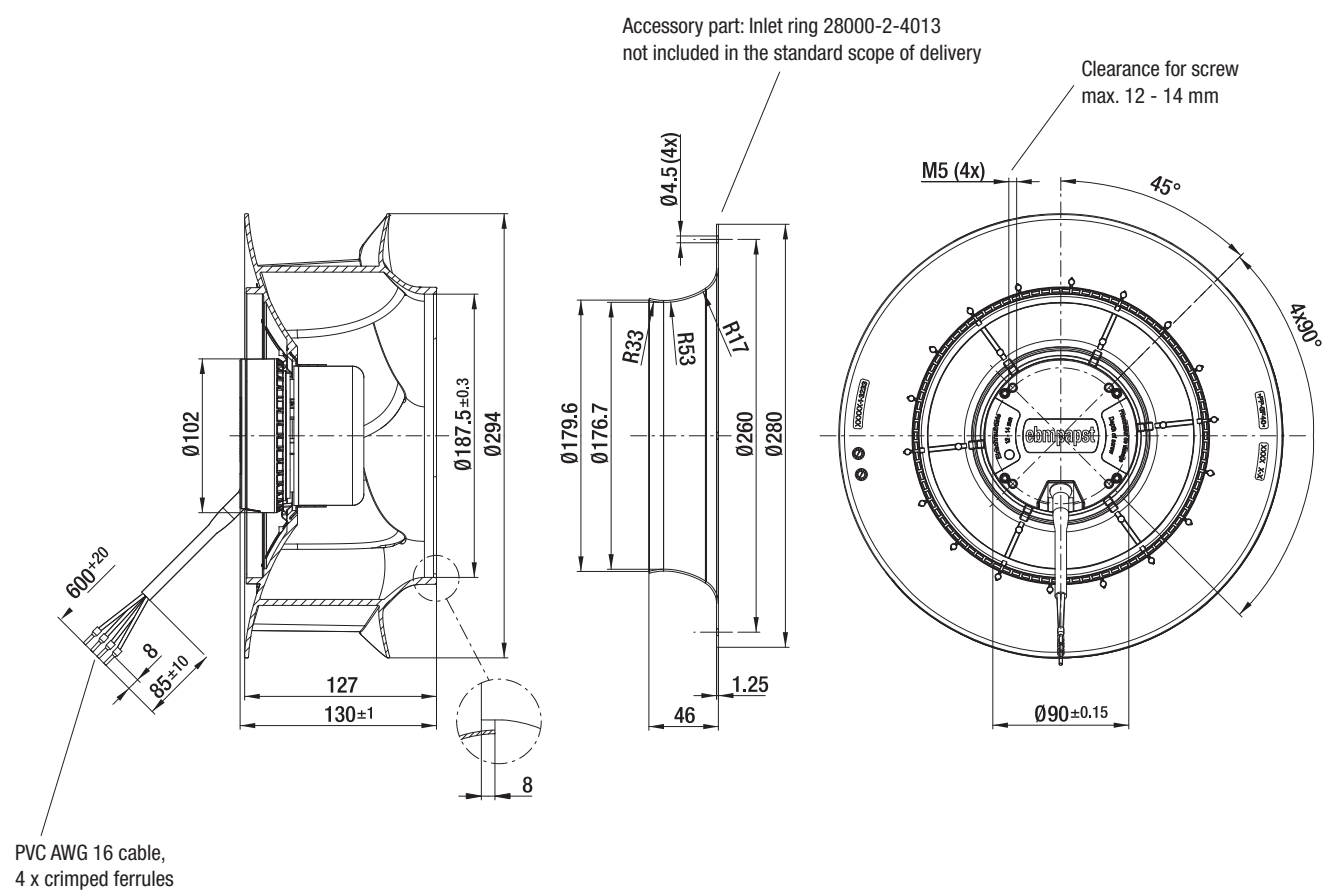
2.4

28000-2-4013

R3G 280-RNB1 -02

2.4

28000-2-4013



Max. 2380 m³/h

DC centrifugal fans – RadiCal

Ø 310 mm

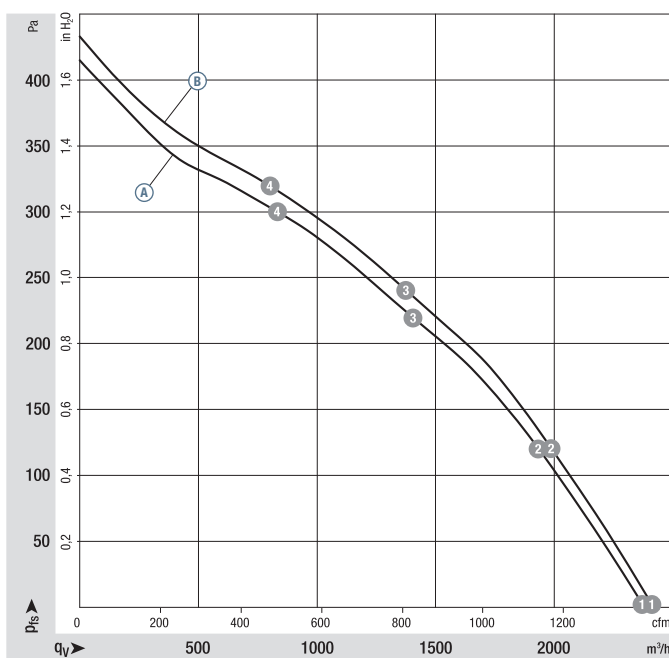


- **Material:** Impeller: PP plastic
Rotor: Painted black
- **Number of blades:** 6
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m³/h	rpm ⁻¹	W	A	dB(A)	°C	
R3G 310	M3G 074-CF	Ⓐ	24	16-28	2310	1580	108	4.50	64	-25...+60	p. 262 / J5)
R3G 310	M3G 074-CF	Ⓑ	48	36-57	2380	1620	123	2.60	64	-25...+60	p. 262 / J5)

Subject to change

Curves:



	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ ①	1580	108	4.50	70
Ⓐ ②	1540	145	6.03	67
Ⓐ ③	1520	152	6.34	63
Ⓐ ④	1550	143	5.95	65
Ⓑ ①	1620	123	2.60	70
Ⓑ ②	1570	147	3.07	66
Ⓑ ③	1545	156	3.26	63
Ⓑ ④	1580	144	3.01	66

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst inlet ring without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{PA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general conditions>

- **Technical features:** See connection diagram p. 262
- **Cable exit:** Variable
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight
centrifugal fans



Centrifugal fans

kg

Inlet ring

R3G 310-RN99 -01

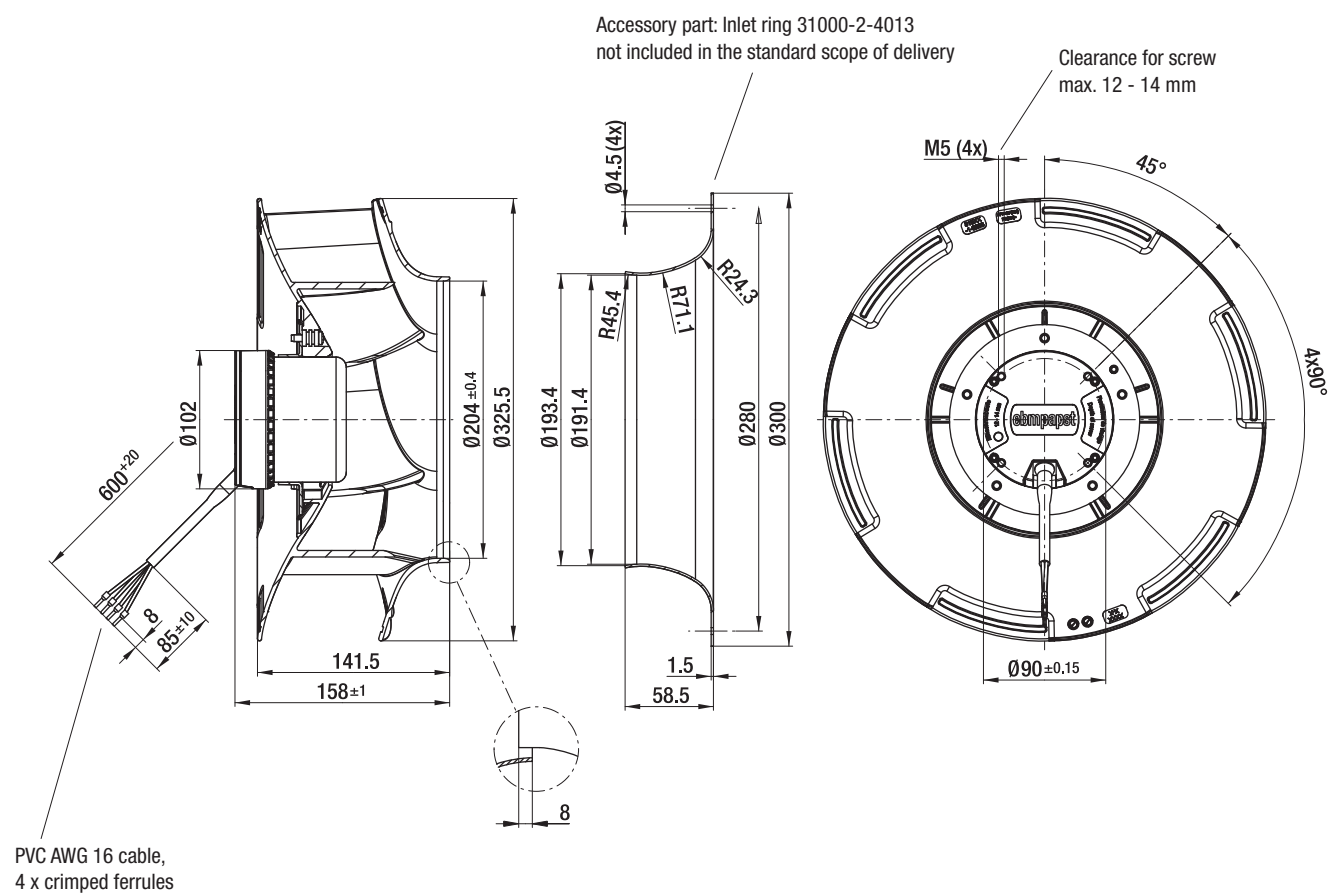
2.8

31000-2-4013

R3G 310-RN98 -02

2.8

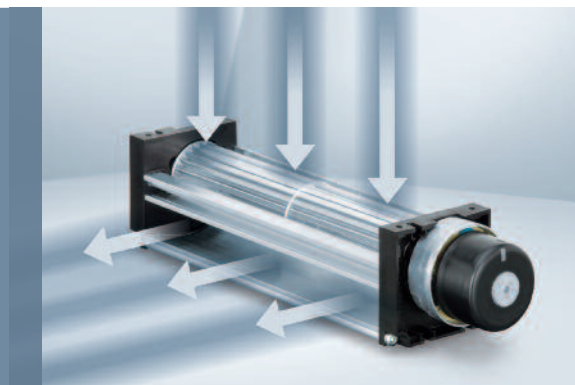
31000-2-4013



Max. 155 m³/h

DC tangential fans

201...413 x 50 x 48 mm



- **Material:** Housing: Aluminum
Housing side parts: Plastic
Impeller: Aluminum
- **Direction of air flow:** See photo
- **Connection:** via single wires AWG 24, TR 64
- **Highlights:** Motor with ball bearing system
Impeller retaining plate with sleeve bearing
- **Weight:** 235 / 290 / 380 / 415 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Moisture protection

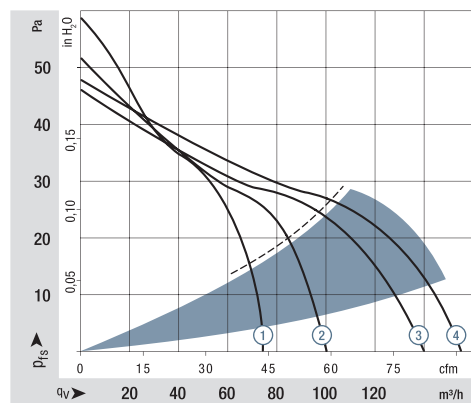
Series QG 030													
Nominal data	Air flow		Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
	Type	m³/h											
QG 030-148/12	75	44	12	8...14	49	5.7	▣/■	6.2	-20...+60	30 000 / 20 000	50 000	50 000	①
QG 030-198/12	100	59	12	8...14	51	5.8	▣/■	8,0	-20...+60	30 000 / 20 000	50 000	50 000	②
QG 030-303/12	140	82	12	8...14	51	5.8	▣/■	8.7	-20...+60	30 000 / 20 000	50 000	50 000	③
QG 030-353/12	155	91	12	8...14	51	5.9	▣/■	9.6	-20...+60	30 000 / 20 000	50 000	50 000	④
QG 030-148/14	75	44	24	16...28	49	5.7	▣/■	6.2	-20...+60	30 000 / 20 000	50 000	50 000	①
QG 030-198/14	100	59	24	16...28	51	5.8	▣/■	8.0	-20...+60	30 000 / 20 000	50 000	50 000	②
QG 030-303/14	140	82	24	16...28	51	5.8	▣/■	8.7	-20...+60	30 000 / 20 000	50 000	50 000	③
QG 030-353/14	155	91	24	16...28	51	5.9	▣/■	9.6	-20...+60	30 000 / 20 000	50 000	50 000	④
Subject to change													

Subject to change

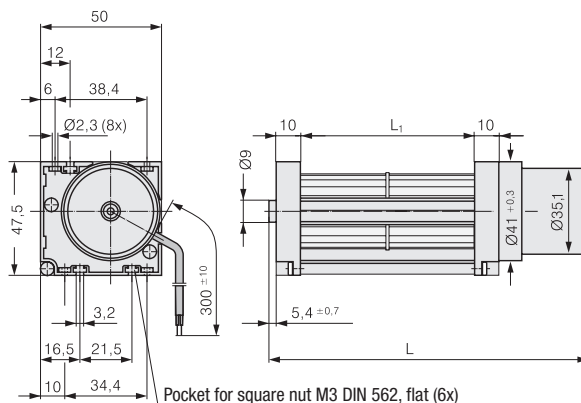
The values for service life were recorded with the fan installed horizontally.

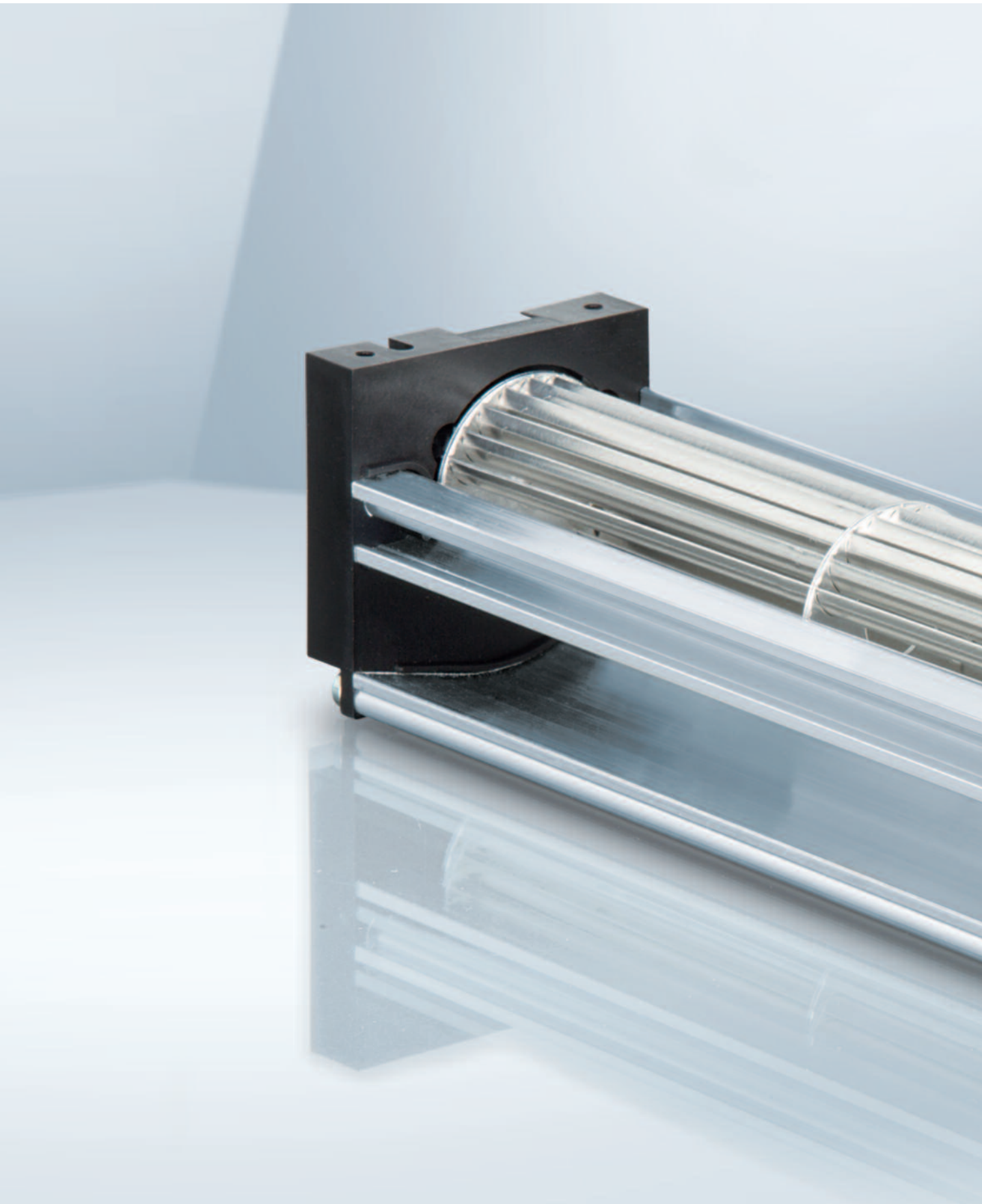
Type	Dimension:	L	L ₁	Mass
QG 030-148/ ..		203.4 ^{+1.5}	148	235 g
QG 030-198/ ..		260.4 ^{+1.5}	198	290 g
QG 030-303/ ..		365.4 ^{+1.5}	303	380 g
QG 030-353/ ..		415.4 ^{+1.5}	353	415 g

----- Tangential fans are suitable only for operation with high air flow and low back-pressure.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level LWA ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level LpA measured at 1 m distance to fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>

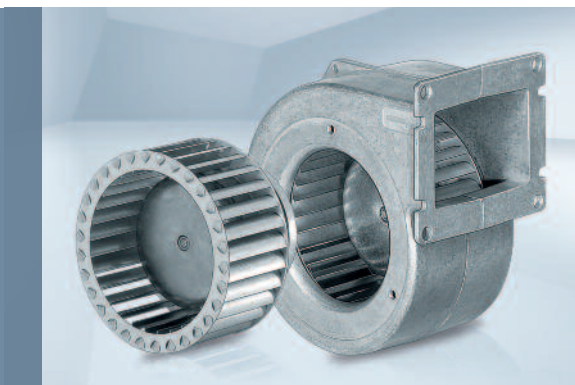




Max. 95 m³/h

DC centrifugal fans and blowers

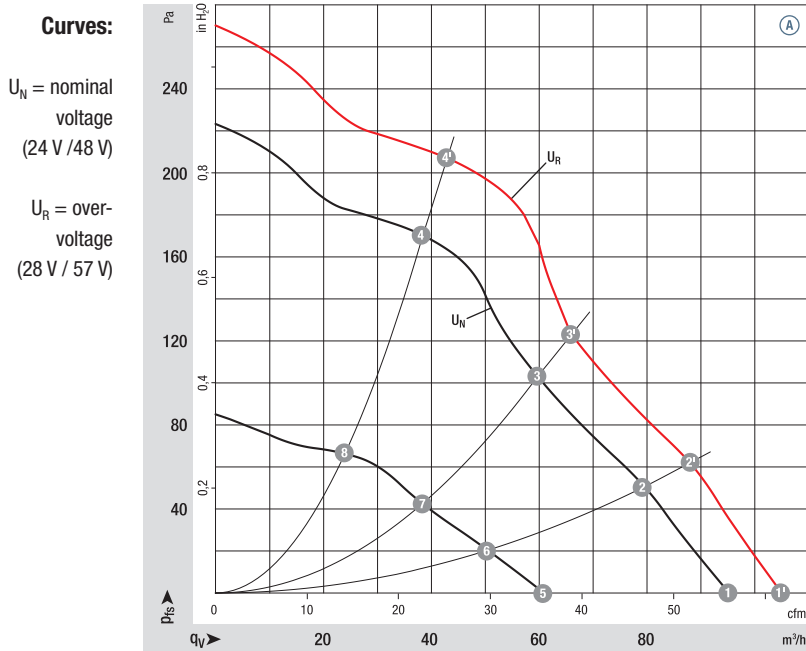
Ø 85 mm



- **Material:** Housing: Die-cast aluminum
Impeller: Hot-dip galvanized sheet steel
Rotor: Galvanized
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 22
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 085	M1G 045-BE	Ⓐ	24	16-28	95	2850	14	0.64	57	0	-25...+60	p. 259 / G)
*1G 085	M1G 045-BE	Ⓐ	48	36-57	95	2850	14	0.32	57	0	-25...+60	p. 259 / G)

Subject to change



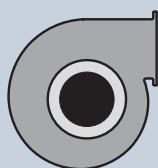
	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	3180	19	59	—
Ⓐ 2'	3300	16	57	28
Ⓐ 3'	3500	15	57	32
Ⓐ 4'	3800	12	57	37
Ⓐ 1	2850	14	57	—
Ⓐ 2	3000	12	55	28
Ⓐ 3	3180	11	55	32
Ⓐ 4	3400	9	54	37
Ⓐ 5	1890	5	46	—
Ⓐ 6	1970	4	44	25
Ⓐ 7	2070	4	44	30
Ⓐ 8	2170	3	42	33

Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC



Weight
centrifugal fans



Weight
centrifugal blowers

Centrifugal fans

kg

Centrifugal blowers with flange

kg

R1G 085-AB05 -01

0.5

G1G 085-AB05 -01

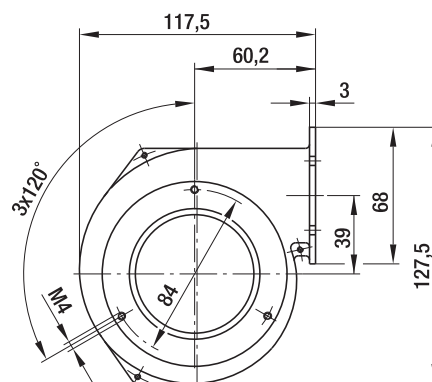
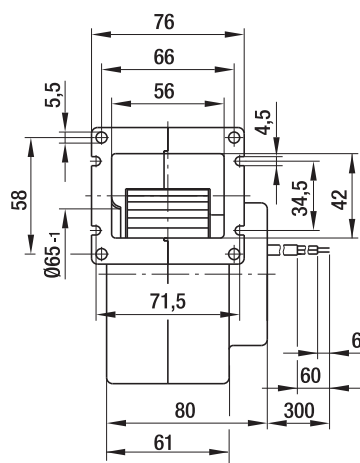
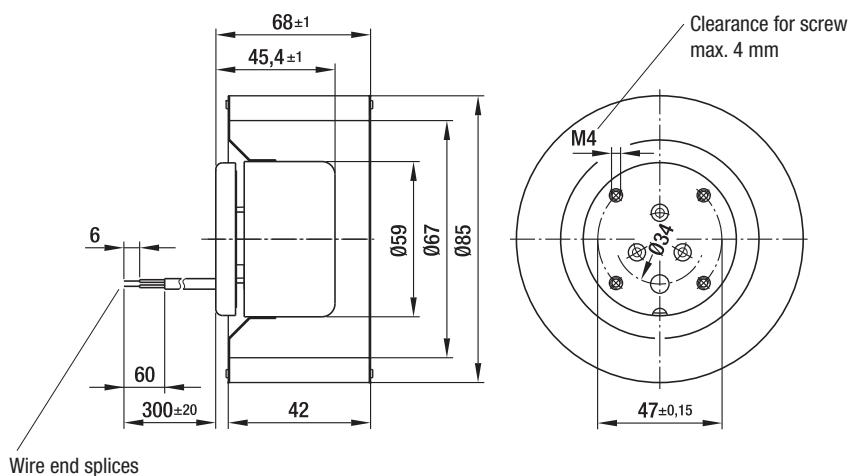
0.8

R1G 085-AB07 -01

0.5

G1G 085-AB07 -01

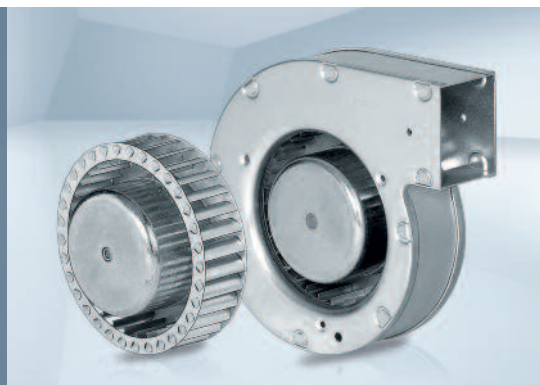
0.8



Max. 95 m³/h

DC centrifugal fans and blowers

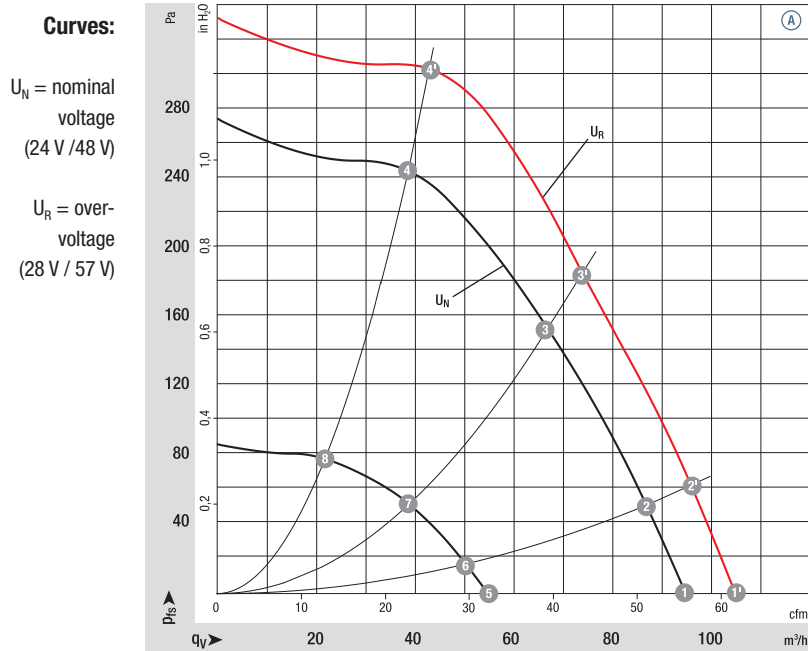
Ø 97 mm



- **Material:** Housing: Hot-dip galvanized sheet steel
Impeller: Hot-dip galvanized sheet steel
Rotor: Galvanized
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 22
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage		Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 097	M1G 045-BE	Ⓐ	24	16-28	95	2650	16	0.75	59	0	-25...+60	p. 259 / G)
*1G 097	M1G 045-BE	Ⓐ	48	36-57	95	2650	16	0.38	59	0	-25...+60	p. 259 / G)

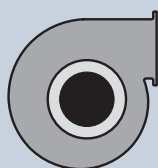
Subject to change



	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	2920	22	62	—
Ⓐ 2'	3030	21	61	41
Ⓐ 3'	3300	17	59	48
Ⓐ 4'	3700	13	58	48
Ⓐ 1	2650	16	59	—
Ⓐ 2	2730	15	58	41
Ⓐ 3	2960	13	56	48
Ⓐ 4	3290	10	55	48
Ⓐ 5	1615	4	45	—
Ⓐ 6	1650	4	45	38
Ⓐ 7	1745	4	43	46
Ⓐ 8	1880	3	42	47

Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** EAC

Weight
centrifugal fansWeight
centrifugal blowers

Centrifugal fans

kg

Centrifugal blowers
with flange

kg

R1G 097-AA05 -01

0.5

G1G 097-AA05 -01

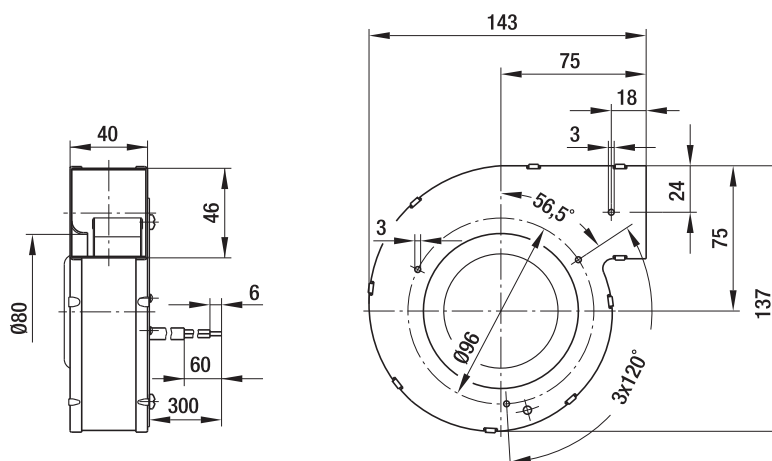
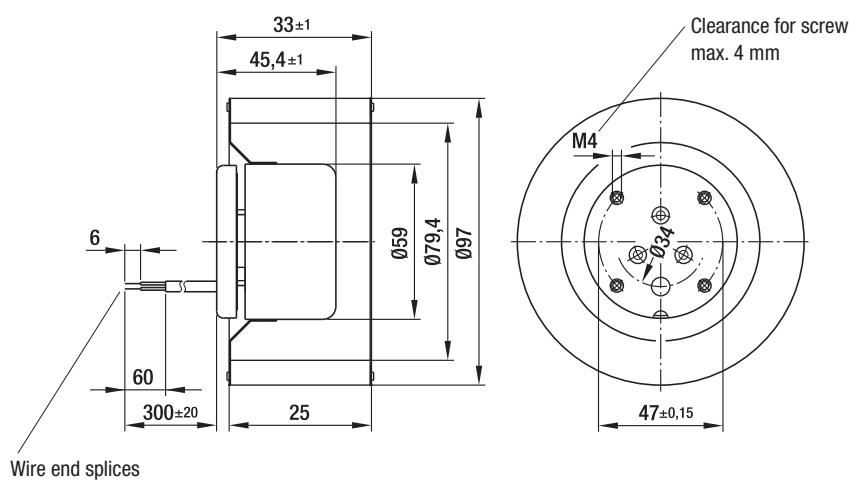
0.8

R1G 097-AA07 -01

0.5

G1G 097-AA07 -01

0.8



Max. 200 m³/h

DC centrifugal fans and blowers

Ø 108 mm



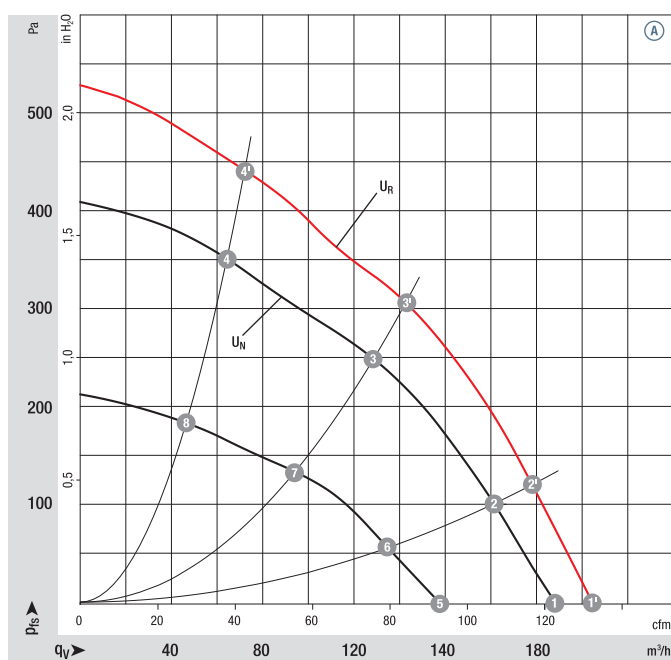
- **Material:** Housing: Die-cast aluminum
Impeller: Hot-dip galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 22
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m³/h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 108	M1G 055-BD	Ⓐ	24	16-28	200	3000	42	2.00	65	0	-25...+60	p. 259 / G)
*1G 108	M1G 055-BD	Ⓐ	48	36-57	200	3000	42	1.00	65	0	-25...+60	p. 259 / G)
Subject to change												

Curves:

U_N = nominal voltage
(24 V / 48 V)

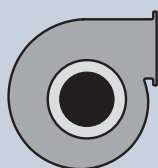
U_R = over-voltage
(28 V / 57 V)



	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	3230	55	67	—
Ⓐ 2'	3410	52	66	33
Ⓐ 3'	3800	43	65	41
Ⓐ 4'	4100	35	64	33
Ⓐ 1	3000	42	65	—
Ⓐ 2	3140	40	64	33
Ⓐ 3	3420	32	63	41
Ⓐ 4	3690	26	63	33
Ⓐ 5	2300	20	61	—
Ⓐ 6	2380	17	58	33
Ⓐ 7	2550	14	55	41
Ⓐ 8	2720	11	55	33

Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:**  (24 VDC) UL, CSA,  (48 VDC) CCC

Weight
centrifugal fansWeight
centrifugal blowers

Centrifugal fans

kg

Centrifugal blowers
with flange

kg

R1G 108-AB17 -02

0.7

G1G 108-AB17 -02

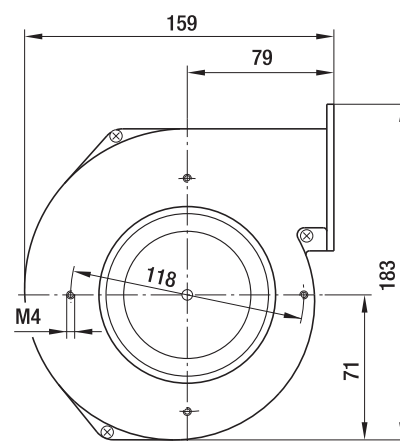
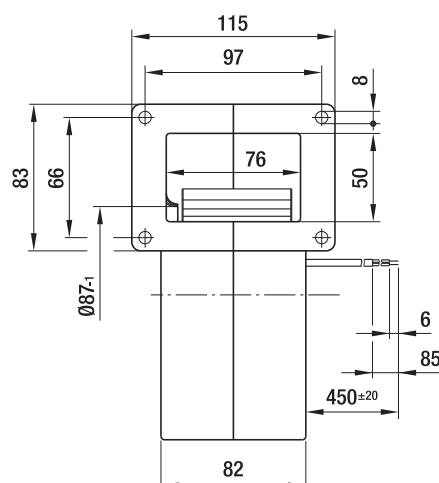
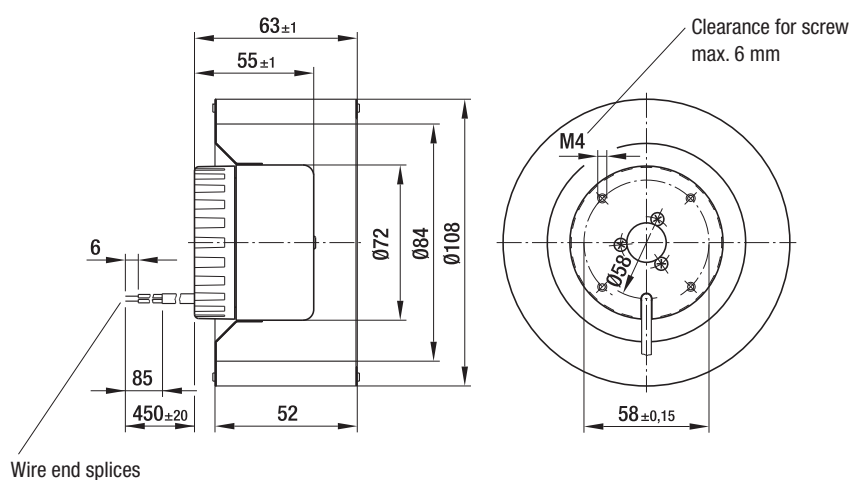
1.4

R1G 108-AB41 -02

0.7

G1G 108-AB41 -02

1.4



Max. 255 m³/h

DC centrifugal fans and blowers

Ø 120 mm



- **Material:** Housing: Die-cast aluminum
Impeller: Hot-dip galvanized sheet steel
Rotor: Galvanized
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 22
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

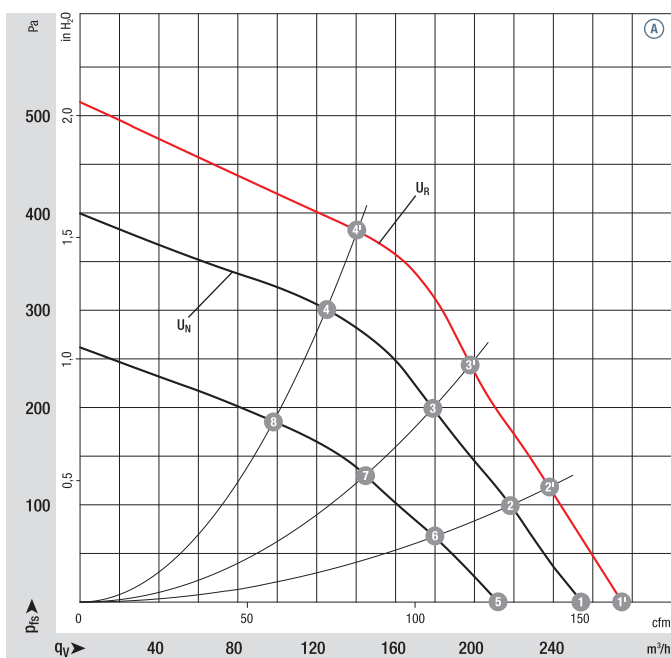
Nominal data		Curve	Nominal voltage		Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 120	M1G 055-BD	Ⓐ	24	16-28	255	2200	40	1.90	62	0	-25...+60	p. 259 / G)
*1G 120	M1G 055-BD	Ⓐ	48	36-57	255	2200	40	0.95	62	0	-25...+60	p. 259 / G)

Subject to change

Curves:

U_N = nominal voltage
(24 V / 48 V)

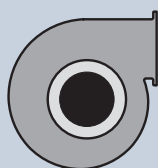
U_R = over-voltage
(28 V / 57 V)



Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general conditions>

	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	2410	50	63	—
Ⓐ 2'	2620	47	62	58
Ⓐ 3'	2870	44	61	60
Ⓐ 4'	3200	36	62	55
Ⓐ 1	2200	40	62	—
Ⓐ 2	2410	36	60	59
Ⓐ 3	2600	32	58	62
Ⓐ 4	2880	25	58	55
Ⓐ 5	1870	24	55	—
Ⓐ 6	1990	21	54	58
Ⓐ 7	2100	18	53	61
Ⓐ 8	2310	14	54	54

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:**  (24 VDC) UL, CSA,  (48 VDC) CCC

Weight
centrifugal fansWeight
centrifugal blowers

Centrifugal fans

kg

Centrifugal blowers
with flange

kg

R1G 120-AB67 -02

0.8

G1G 120-AB67 -02

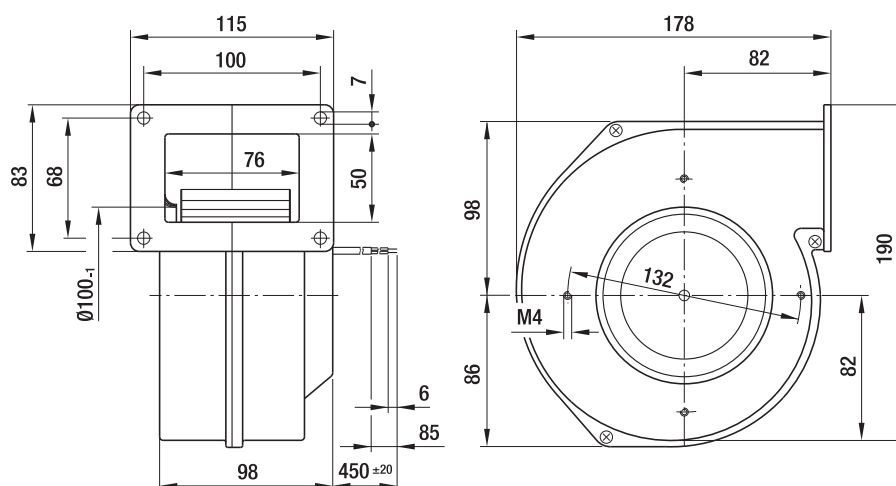
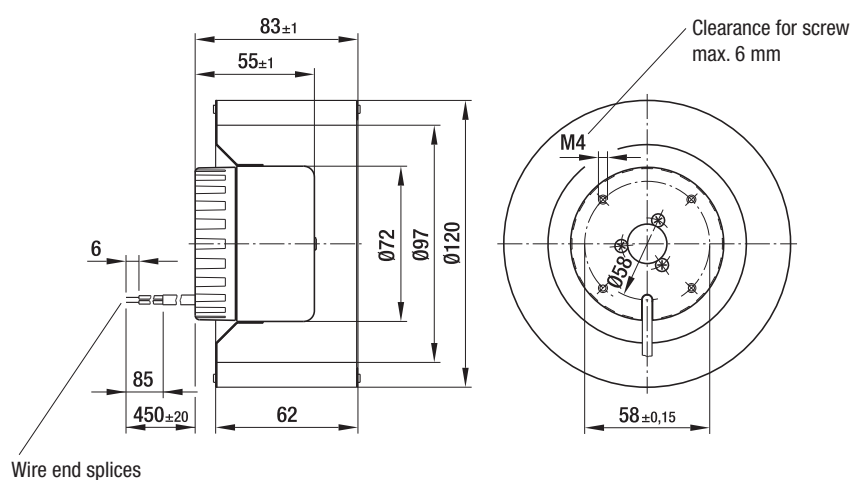
1.6

R1G 120-AB71 -02

0.8

G1G 120-AB71 -02

1.6



Max. 225 m³/h

DC centrifugal fans and blowers

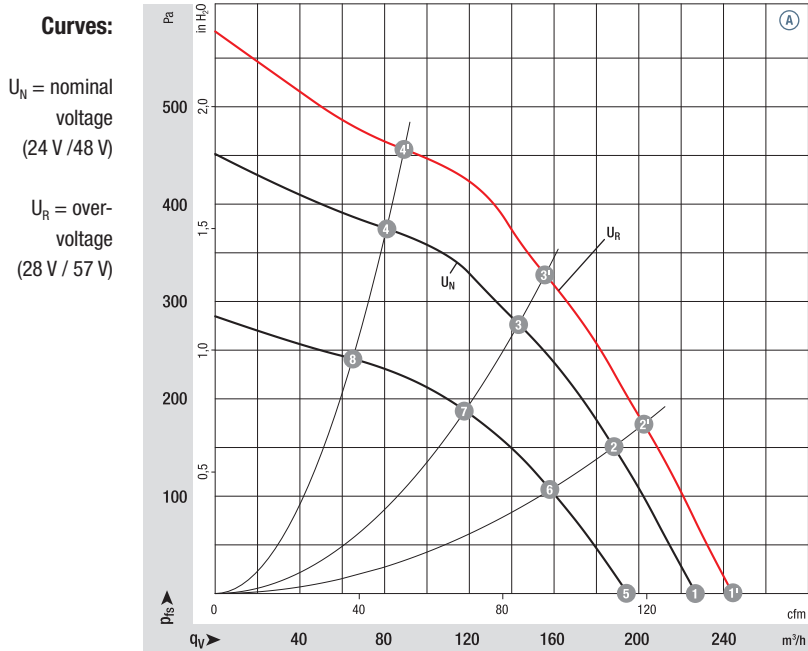
Ø 133 mm



- **Material:** Housing: Hot-dip galvanized sheet steel
Impeller: Hot-dip galvanized sheet steel
Rotor: Galvanized
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 22
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 133	M1G 055-BD	Ⓐ	24	16-28	225	2000	40	2.20	64	0	-25...+60	p. 259 / G)
*1G 133	M1G 055-BD	Ⓐ	48	36-57	225	2000	40	1.10	64	0	-25...+60	p. 259 / G)

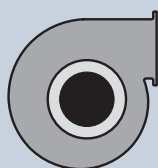
Subject to change



	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	2170	57	66	—
Ⓐ 2'	2410	51	66	47
Ⓐ 3'	2750	44	64	49
Ⓐ 4'	3200	36	66	32
Ⓐ 1	2000	45	64	—
Ⓐ 2	2230	40	64	49
Ⓐ 3	2540	35	62	51
Ⓐ 4	2920	27	63	33
Ⓐ 5	1750	28	60	—
Ⓐ 6	1910	24	59	50
Ⓐ 7	2120	20	58	53
Ⓐ 8	2370	15	59	35

Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Lateral
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:**  (24 VDC) UL, CSA,  (48 VDC) CCC

Weight
centrifugal fansWeight
centrifugal blowers

Centrifugal fans

kg

Centrifugal blowers
with flange

kg

R1G 133-AE19 -02

0.7

G1G 133-DE19 -02

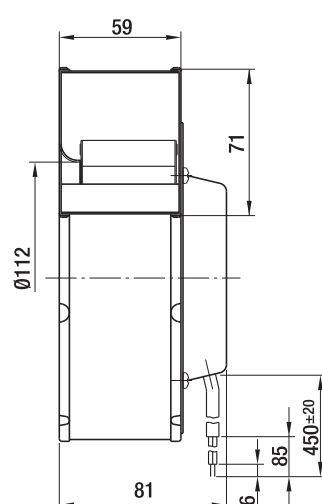
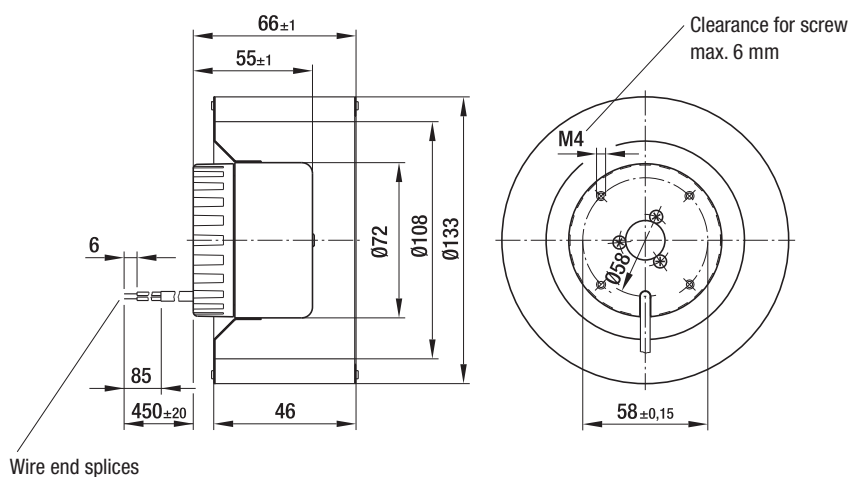
1.3

R1G 133-AE03 -02

0.7

G1G 133-DE03 -02

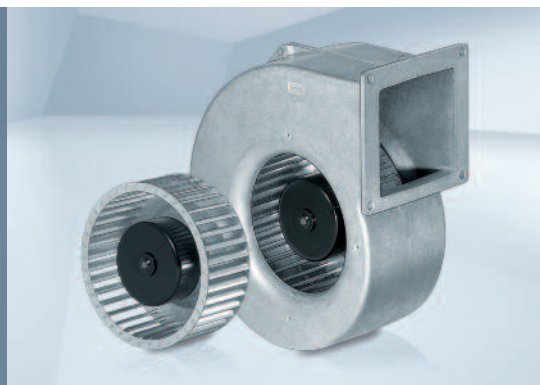
1.3



Max. 410 m³/h

DC centrifugal fans and blowers

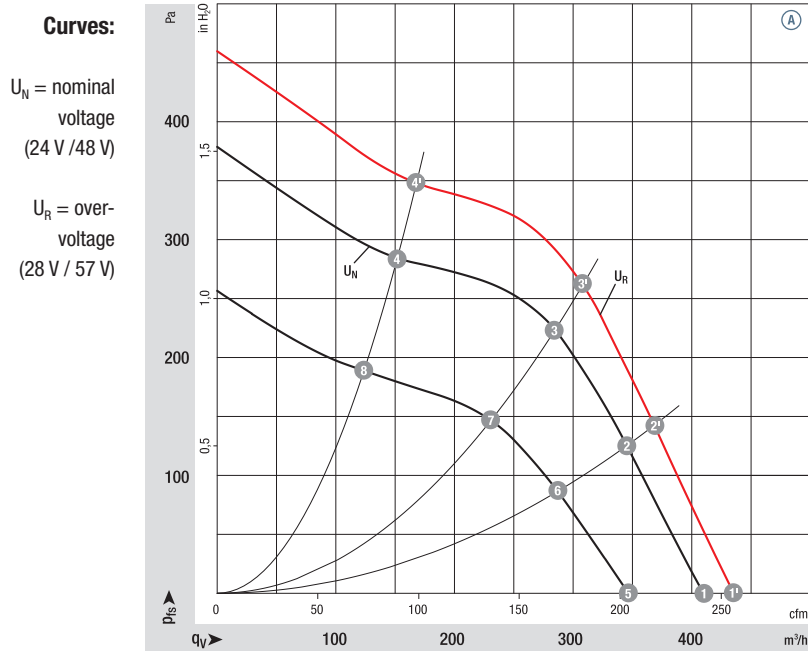
Ø 140 mm



- **Material:** Housing: Die-cast aluminum
Impeller: Hot-dip galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 22
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 140	M1G 055-BD	Ⓐ	24	16-28	400	1750	54	2.50	63	0	-25...+60	p. 259 / G)
*1G 140	M1G 055-BD	Ⓐ	48	36-57	410	1750	54	1.30	63	0	-25...+60	p. 259 / G)

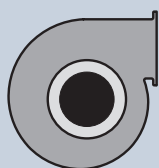
Subject to change



	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	1850	65	64	—
Ⓐ 2'	2020	61	61	50
Ⓐ 3'	2200	57	59	54
Ⓐ 4'	2550	43	60	40
Ⓐ 1	1750	54	63	—
Ⓐ 2	1900	50	59	51
Ⓐ 3	2030	45	58	54
Ⓐ 4	2310	32	58	40
Ⓐ 5	1500	34	60	—
Ⓐ 6	1580	29	56	50
Ⓐ 7	1670	25	54	53
Ⓐ 8	1880	19	53	41

Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebm-papst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** Ⓐ (48 VDC) CCC

Weight
centrifugal fansWeight
centrifugal blowers

Centrifugal fans

kg

Centrifugal blowers
with flange

kg

R1G 140-AV17 -02

1.0

G1G 140-AV17 -02

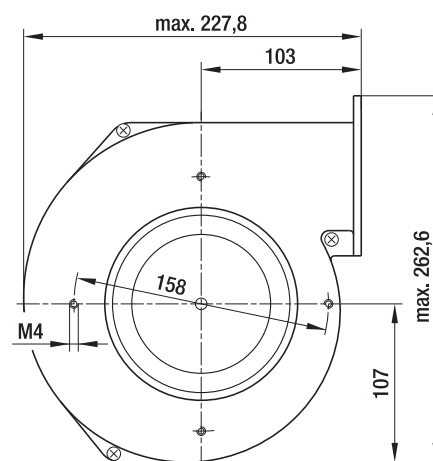
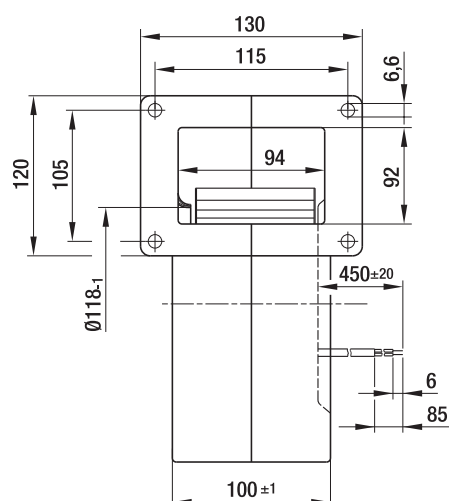
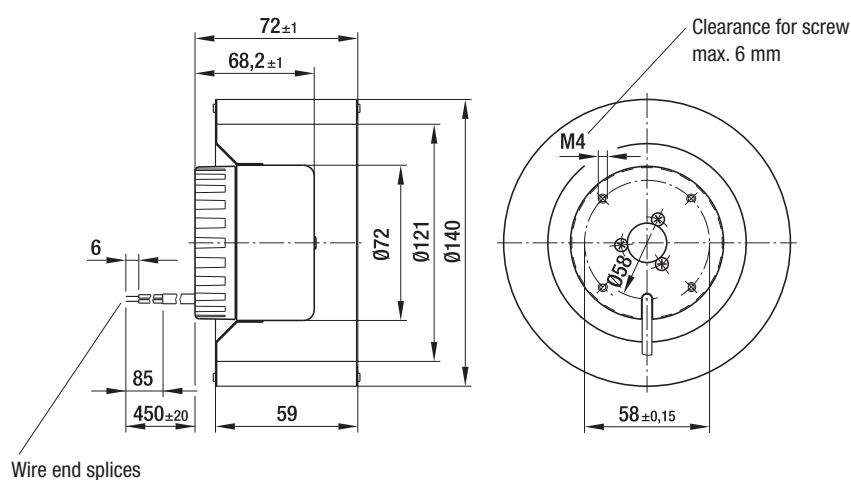
2.3

R1G 140-AV21 -02

1.0

G1G 140-AV21 -02

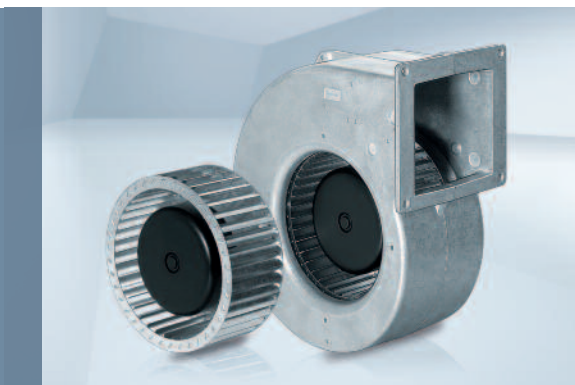
2.3



Max. 470 m³/h

DC centrifugal fans and blowers

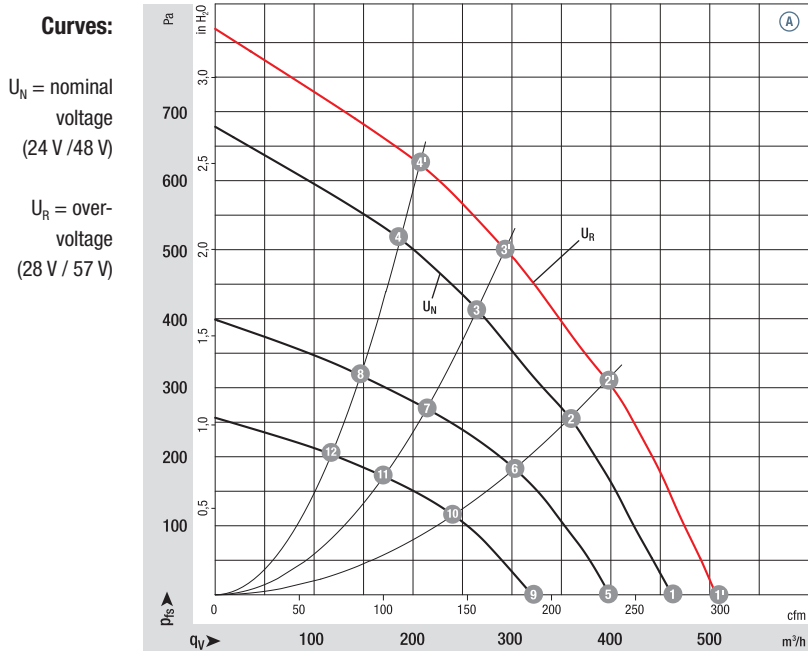
Ø 146 mm



- **Material:** Housing: Die-cast aluminum
Impeller: Hot-dip galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 146	M1G 074-BF	Ⓐ	24	16-28	470	2200	100	5.00	68	0	-25...+60	p. 259 / G)
*1G 146	M1G 074-BF	Ⓐ	48	36-57	465	2150	100	2.60	67	0	-25...+60	p. 259 / G)

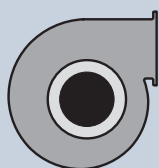
Subject to change



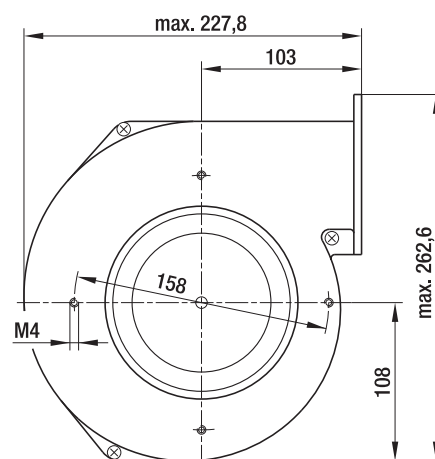
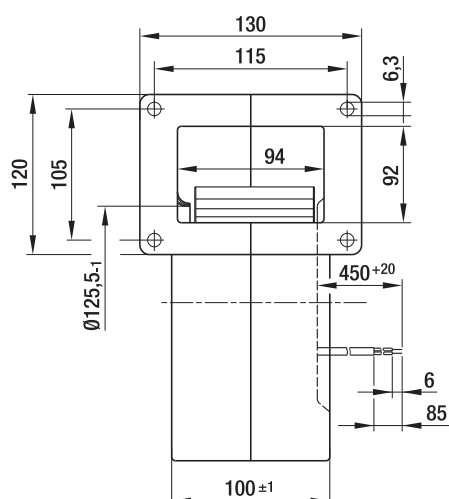
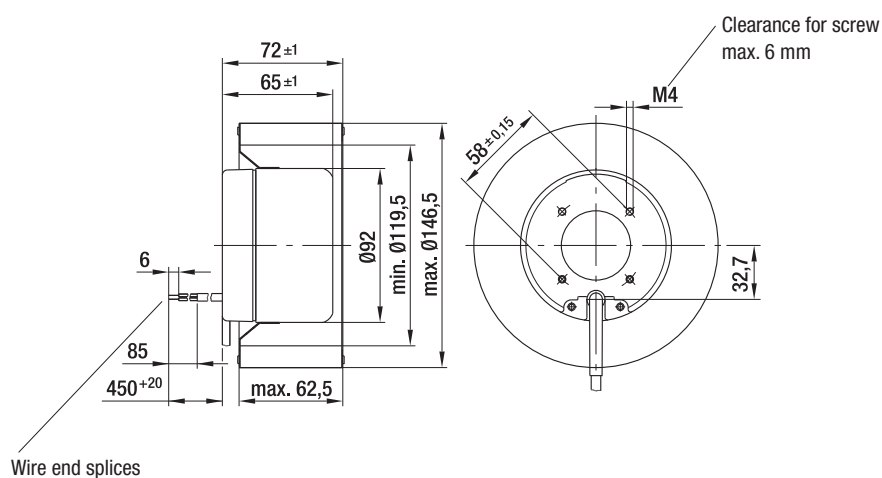
	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	2400	140	70	—
Ⓐ 2'	2650	130	67	45
Ⓐ 3'	3000	110	66	49
Ⓐ 4'	3300	100	67	45
Ⓐ 1	2200	100	68	—
Ⓐ 2	2445	90	65	46
Ⓐ 3	2750	84	64	49
Ⓐ 4	3025	77	65	45
Ⓐ 5	1890	68	63	—
Ⓐ 6	2075	57	60	46
Ⓐ 7	2250	48	61	49
Ⓐ 8	2335	41	61	45
Ⓐ 9	1520	37	59	—
Ⓐ 10	1670	32	55	46
Ⓐ 11	1815	27	55	49
Ⓐ 12	1920	23	55	45

Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA, CCC (only centrifugal blowers)

Weight
centrifugal fansWeight
centrifugal blowers

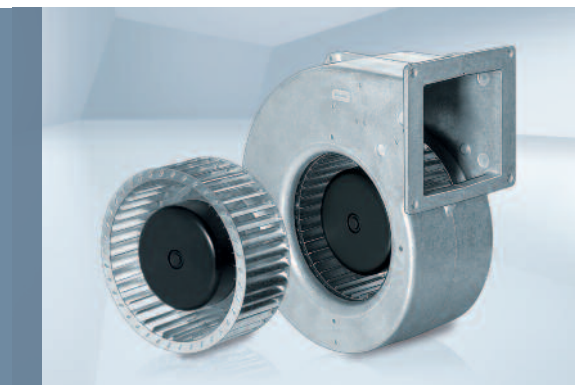
Centrifugal fans	kg	Centrifugal blowers with flange	kg
R1G 146-AA07 -52	1.4	G1G 146-BA07 -52	2.8
R1G 146-AA11 -52	1.4	G1G 146-BA11 -52	2.8



Max. 505 m³/h

DC centrifugal fans and blowers

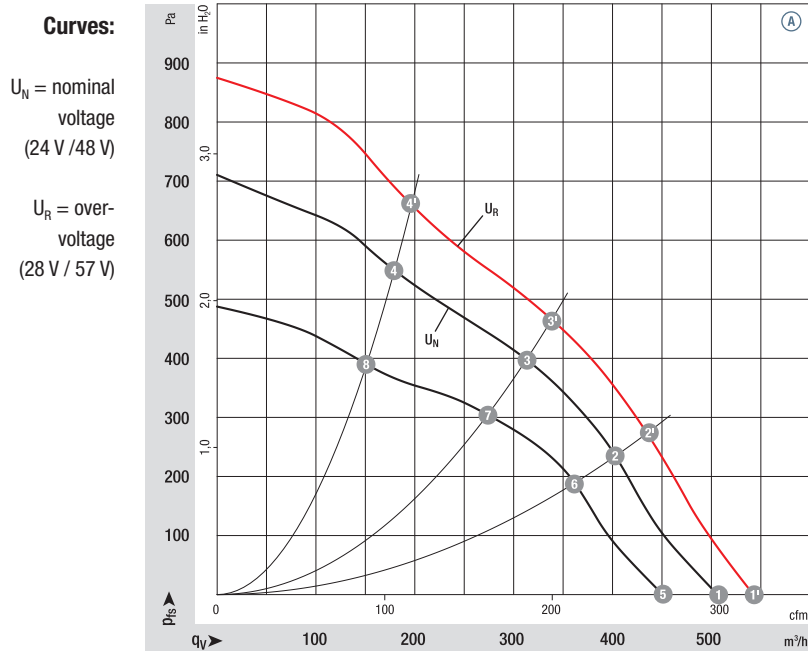
Ø 160 mm



- **Material:** Housing: Die-cast aluminum
Impeller: Hot-dip galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Nominal voltage range	Air flow	Nominal speed	Power consumption	Input current	Sound pressure level	Min. back-pressure	Admissible amb. temp.	Technical features and connection diagram
Type	Motor		VDC	VDC	m ³ /h	rpm ⁻¹	W	A	dB(A)	Pa	°C	
*1G 160	M1G 074-BF	Ⓐ	24	16-28	505	1750	105	5.80	67	0	-25...+60	p. 259 / G)
*1G 160	M1G 074-BF	Ⓐ	48	36-57	505	1750	105	2.90	67	0	-25...+60	p. 259 / G)

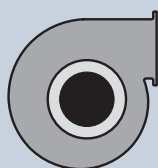
Subject to change



	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	1890	134	68	—
Ⓐ 2'	2200	118	67	52
Ⓐ 3'	2500	110	67	57
Ⓐ 4'	2900	102	69	52
Ⓐ 1	1750	105	67	—
Ⓐ 2	2030	95	66	52
Ⓐ 3	2270	90	65	57
Ⓐ 4	2550	81	67	44
Ⓐ 5	1580	72	62	—
Ⓐ 6	1810	66	62	52
Ⓐ 7	2000	58	62	57
Ⓐ 8	2200	48	63	54

Air performance measured according to: ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebm-papst.com/general-conditions>

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Axial
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA

Weight
centrifugal fansWeight
centrifugal blowers

Centrifugal fans

kg

Centrifugal blowers
with flange

kg

R1G 160-AH29 -52

1.4

G1G 160-BH29 -52

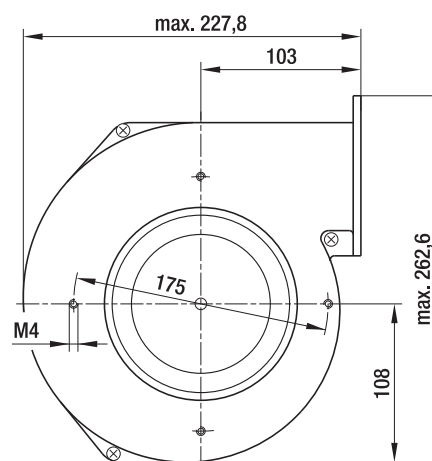
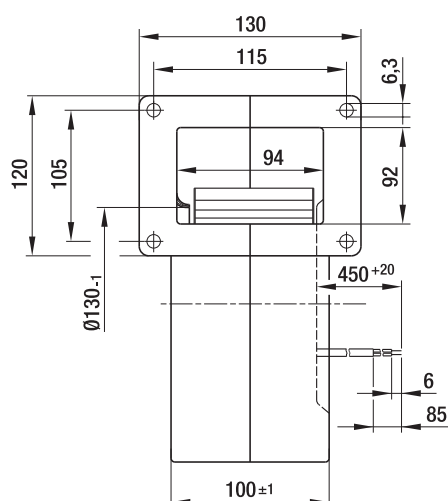
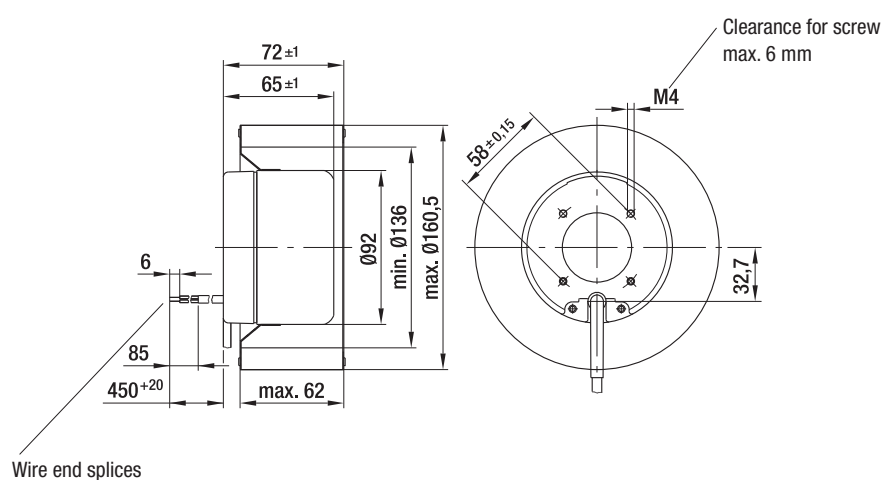
2.8

R1G 160-AH39 -52

1.4

G1G 160-BH39 -52

2.8



Max. 700 m³/h

DC centrifugal blowers

Ø 133 mm



- **Material:** Housing: Galvanized sheet steel
Impeller: Galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** SAL motor mounted with vibration damping on both sides
- **Bearings:** Maintenance-free ball bearings

Nominal data

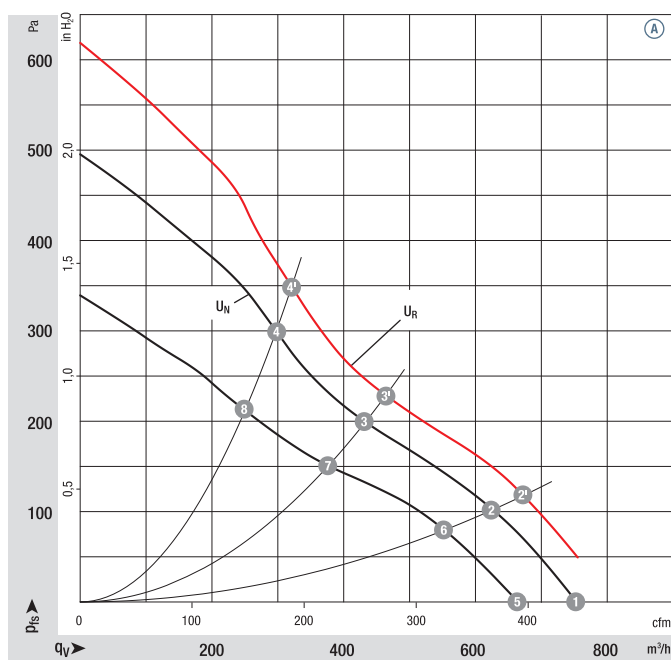
Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m ³ /h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Min. back-pressure Pa	Admissible amb. temp. °C	Technical features and connection diagram
D1G 133	M1G 074-BF	Ⓐ	24	16-28	700	1780	105	5.60	62	50	-25...+60	p. 259 / G)
D1G 133	M1G 074-BF	Ⓐ	48	36-57	700	1780	105	2.80	62	50	-25...+60	p. 259 / G)

Subject to change

Curves:

U_N = nominal
voltage
(24 V / 48 V)

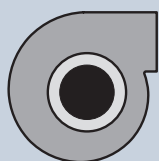
U_R = over-
voltage
(28 V / 57 V)



Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	—	—	—	—
Ⓐ 2'	2050	121	63	49
Ⓐ 3'	2490	106	62	41
Ⓐ 4'	2820	100	62	37
Ⓐ 1	1780	105	62	—
Ⓐ 2	1900	97	61	49
Ⓐ 3	2310	86	59	41
Ⓐ 4	2630	80	60	37
Ⓐ 5	1500	73	59	—
Ⓐ 6	1720	67	57	49
Ⓐ 7	2020	58	56	41
Ⓐ 8	2230	49	56	37

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Variable
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA; ⚡ (48 VDC) also CCC

Weight
centrifugal blowersCentrifugal blowers
without flange

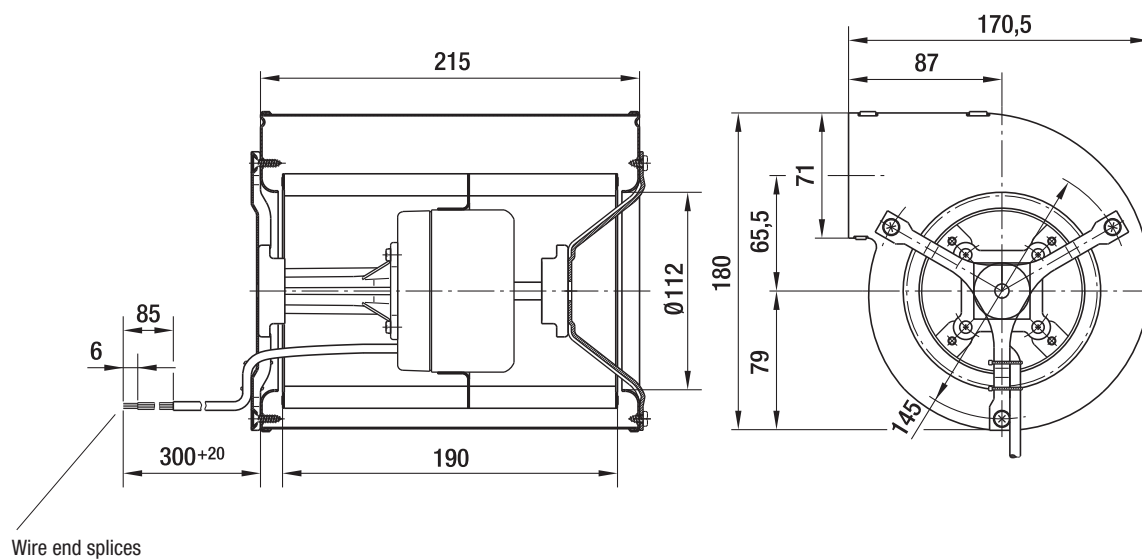
kg

D1G 133-AB29 -52

3.3

D1G 133-AB39 -52

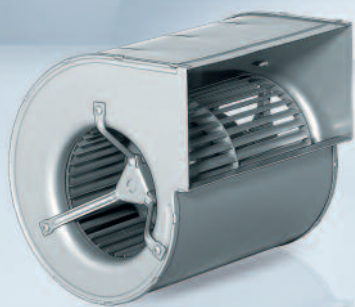
3.3



Max. 1020 m³/h

DC centrifugal blowers

Ø 133 mm



- **Material:** Housing: Galvanized sheet steel
Impeller: Galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** SAL motor mounted with vibration damping on both sides
- **Bearings:** Maintenance-free ball bearings

Nominal data

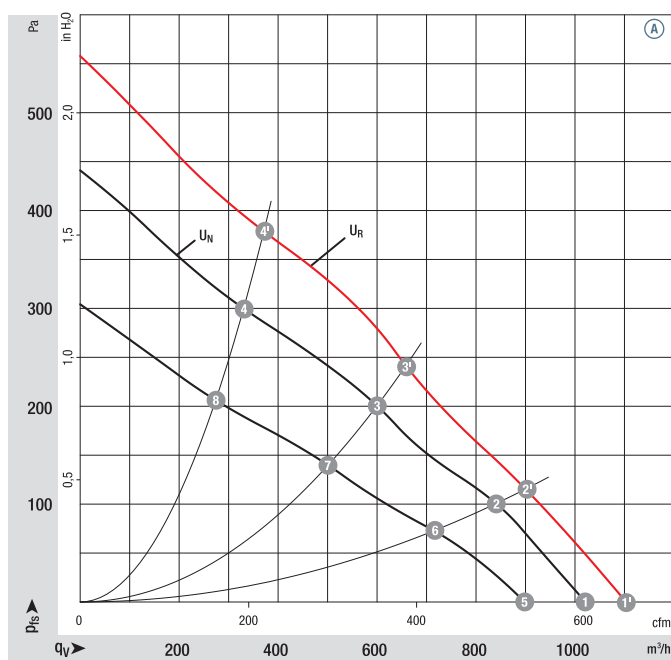
Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m³/h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Min. back-pressure Pa	Admissible amb. temp. °C	Technical features and connection diagram
D1G 133	M1G 074-BF	Ⓐ	24	16-28	1020	1580	118	6.00	64	0	-25...+60	p. 259 / G)
D1G 133	M1G 074-BF	Ⓐ	48	36-57	1020	1580	118	3.00	64	0	-25...+60	p. 259 / G)

Subject to change

Curves:

U_N = nominal
voltage
(24 V / 48 V)

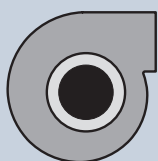
U_R = over-
voltage
(28 V / 57 V)



Air performance measured according to: ISO 5801, Installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{wA} according to ISO 13347, L_pA measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebm-papst.com/general-conditions>

	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	1700	145	65	—
Ⓐ 2'	1930	133	62	38
Ⓐ 3'	2290	122	59	41
Ⓐ 4'	2700	99	61	32
Ⓐ 1	1580	118	64	—
Ⓐ 2	1790	107	61	38
Ⓐ 3	2100	95	57	41
Ⓐ 4	2410	73	58	32
Ⓐ 5	1400	78	60	—
Ⓐ 6	1580	70	56	38
Ⓐ 7	1760	56	53	41
Ⓐ 8	2000	44	53	32

- **Technical features:** See connection diagram p. 259
- **EMC (24 VDC):** Interference emission acc. to EN 55022, class B
Immunity to interference acc. to EN 61000-6-2
- **Cable exit:** Variable
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA

Weight
centrifugal blowersCentrifugal blowers
without flange

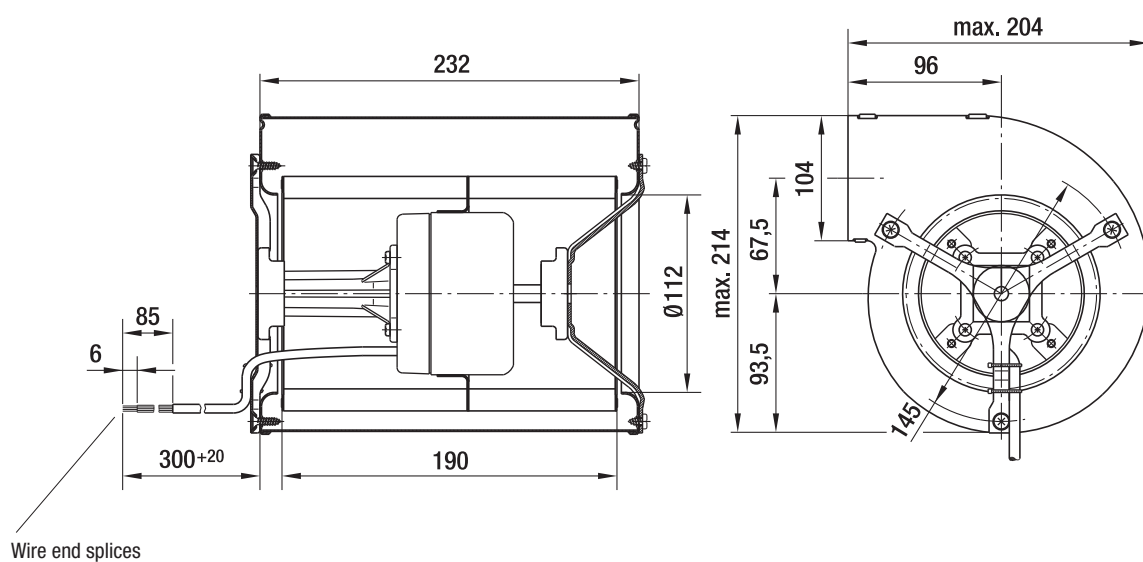
kg

D1G 133-DC13 -52

3.4

D1G 133-DC17 -52

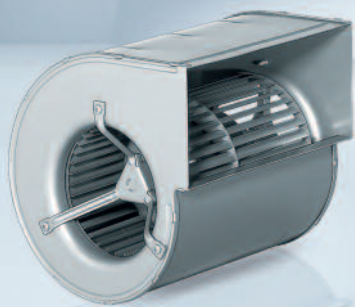
3.4



Max. 1000 m³/h

DC centrifugal blowers

Ø 146 mm



- **Material:** Housing: Galvanized sheet steel
Impeller: Galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** SAL motor mounted with vibration damping on both sides
- **Bearings:** Maintenance-free ball bearings

Nominal data

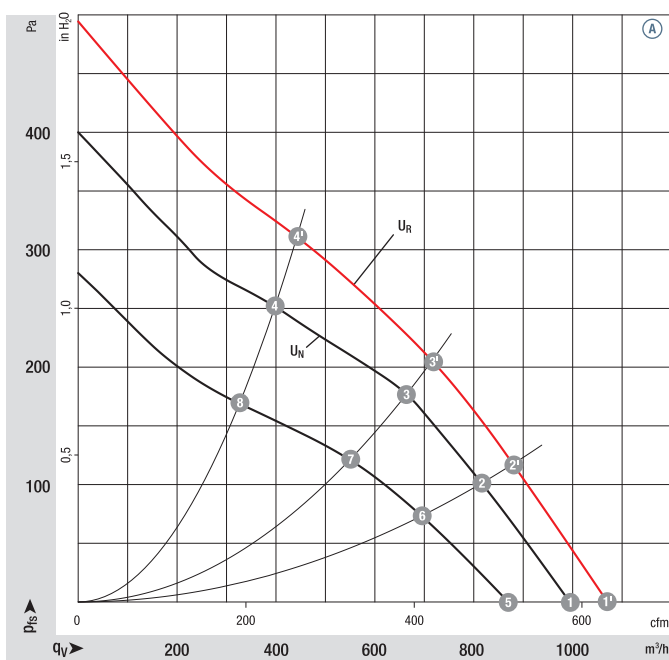
Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m ³ /h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Min. back-pressure Pa	Admissible amb. temp. °C	Technical features and connection diagram
D1G 146	M1G 074-CF	Ⓐ	24	16-28	1000	1350	105	5.10	61	0	-25...+60	p. 259 / G)
D1G 146	M1G 074-CF	Ⓐ	48	36-57	1000	1350	105	2.60	61	0	-25...+60	p. 259 / G)

Subject to change

Curves:

U_N = nominal voltage
(24 V / 48 V)

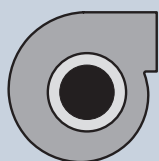
U_R = over-voltage
(28 V / 57 V)



Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebm-papst.com/general-conditions>

	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	1460	129	63	—
Ⓐ 2'	1680	119	60	53
Ⓐ 3'	1890	111	58	61
Ⓐ 4'	2240	95	59	55
Ⓐ 1	1350	105	61	—
Ⓐ 2	1570	95	58	53
Ⓐ 3	1750	88	56	61
Ⓐ 4	2010	70	57	55
Ⓐ 5	1210	70	56	—
Ⓐ 6	1360	60	54	53
Ⓐ 7	1460	53	52	61
Ⓐ 8	1670	42	51	55

- **Technical features:** See connection diagram p. 259
- **EMC (24 VDC):** Interference emission acc. to EN 55022, class B
Immunity to interference acc. to EN 61000-6-2
- **Cable exit:** Variable
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA

Weight
centrifugal blowersCentrifugal blowers
without flange

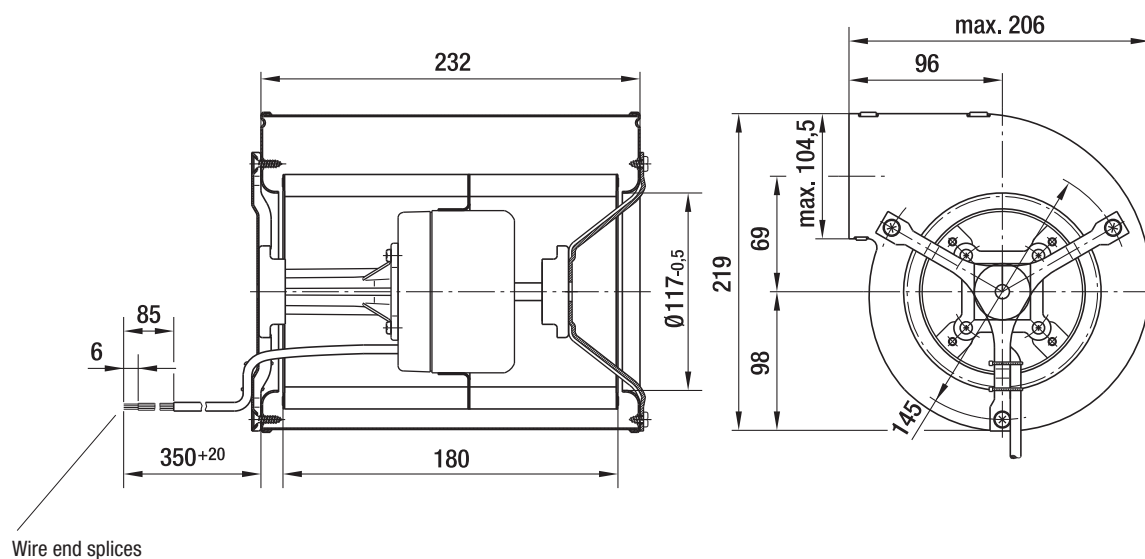
kg

D1G 146-AA19 -52

3.5

D1G 146-AA33 -52

3.5



Max. 980 m³/h

DC centrifugal blowers

Ø 160 mm



- **Material:** Housing: Galvanized sheet steel
Impeller: Galvanized sheet steel
Rotor: Painted black
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** IP 42
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Design:** SAL motor mounted with vibration damping on both sides
- **Bearings:** Maintenance-free ball bearings

Nominal data

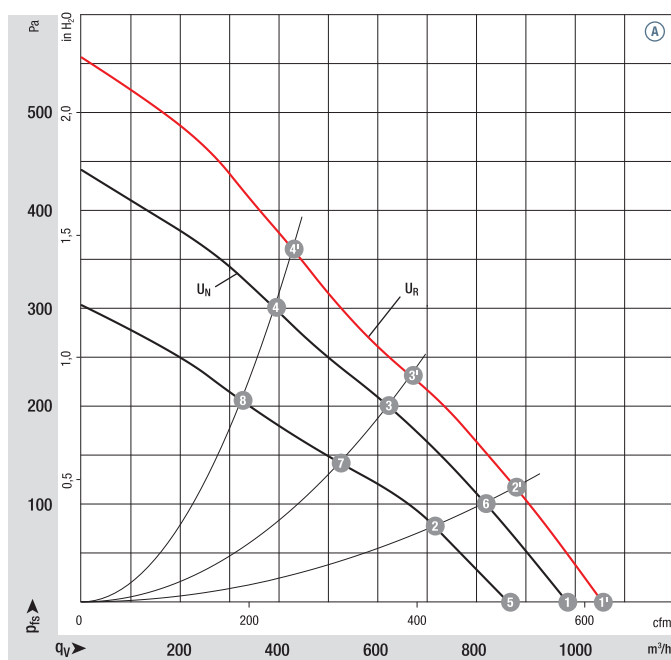
Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Air flow m ³ /h	Nominal speed rpm ⁻¹	Power consumption W	Input current A	Sound pressure level dB(A)	Min. back-pressure Pa	Admissible amb. temp. °C	Technical features and connection diagram
D1G 160	M1G 074-CF	Ⓐ	24	16-28	980	1250	112	5.60	60	0	-25...+60	p. 259 / G)
D1G 160	M1G 074-CF	Ⓐ	48	36-57	980	1250	112	2.90	60	0	-25...+60	p. 259 / G)

Subject to change

Curves:

U_N = nominal voltage
(24 V / 48 V)

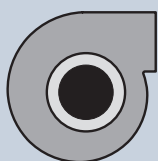
U_R = over-voltage
(28 V / 57 V)



Air performance measured according to: ISO 5801, installation category A, with ebm-papst scroll housing without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

	n rpm ⁻¹	P _{ed} W	L _{pA} dB(A)	η _{IL} %
Ⓐ 1'	1330	142	63	—
Ⓐ 2'	1520	128	61	64
Ⓐ 3'	1790	115	59	66
Ⓐ 4'	2090	105	60	60
Ⓐ 1	1250	112	60	—
Ⓐ 2	1420	102	59	64
Ⓐ 3	1660	92	58	66
Ⓐ 4	1900	80	58	60
Ⓐ 5	1100	75	58	—
Ⓐ 6	1250	69	56	64
Ⓐ 7	1420	58	54	66
Ⓐ 8	1580	47	53	60

- **Technical features:** See connection diagram p. 259
- **Cable exit:** Variable
- **Protection class:** I
- **Conformity with standard(s):** EN 60950-1
- **Approvals:** UL, CSA



Weight
centrifugal blowers

Centrifugal blowers
without flange

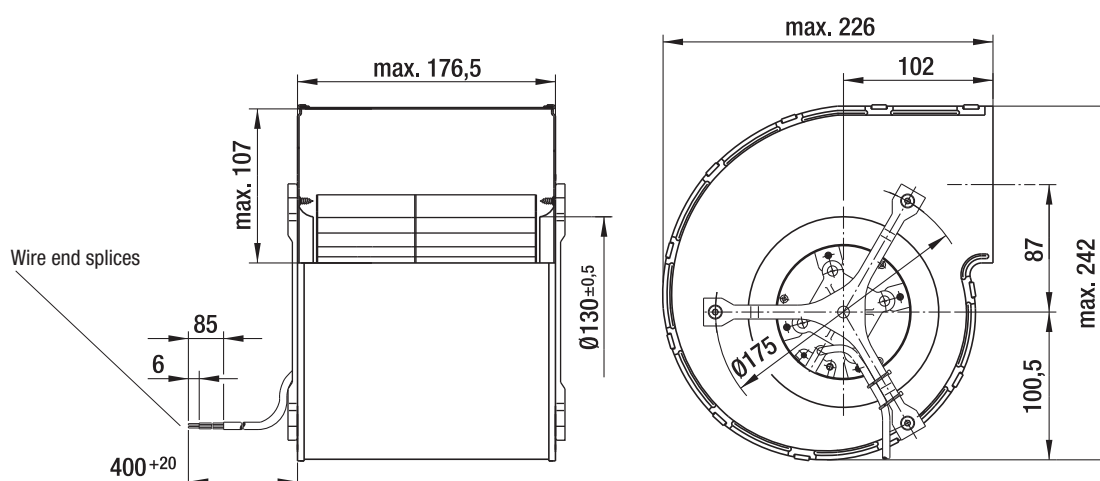
kg

D1G 160-DA19 -52

3.6

D1G 160-DA33 -52

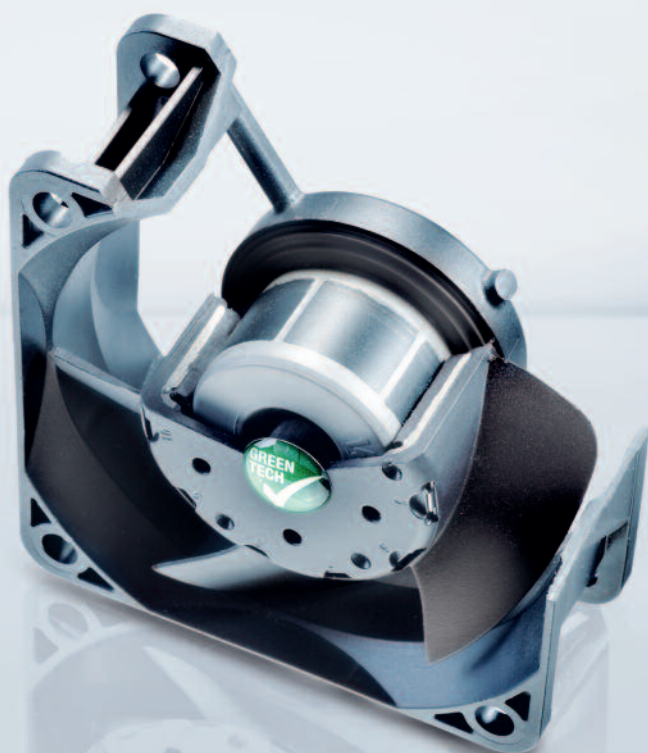
3.6



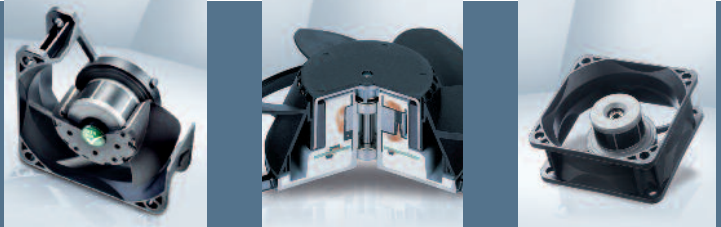


DC fans - specials

Speed signal	168
Alarm signal	172
Vario-Pro / Speed setting / Control input	177
Protected fans, degree of protection: IP 54 / IP 68	181



Technical information



Cooling capacity and efficiency

Greater power density, increasing miniaturization and extreme electronic component density are placing increased demands on the cooling capacity and efficiency of fans. Therefore, intelligent and space-saving integration of the fan in the device configuration is very important:

- Tailor-made cooling adapted to the situation as and when required.
- Programmable cooling by defining speed profiles.
- Transparency of function thanks to complete, interactive monitoring in all operating conditions.

Standard fans in electronics cooling have proven themselves a million times over.

With a constant speed and an appropriate sound level, they continuously provide the air flow required for extreme cases. But these extreme situations occur seldom – if at all – during operation. What is needed is an intelligent fan that adapts automatically to the level of cooling required at the time.

ebm-papst provides intelligent cooling concepts that are optimally adapted to practical requirements. For example:

1. Speed adjustment via temperature sensor

ebm-papst answers with a complete range of DC fans with temperature-controlled speed adjustment via a temperature sensor, available in a variety of standard dimensions.

Installation is very simple. Either an external temperature sensor in the form of an exposed wire that can be placed anywhere, or an internal sensor located directly in the fan hub in the air flow provides continuous and undissipated thermal information to the control electronics for speed adjustment. A range of temperature sensors can be found on page 178.

2. DC fans with separate control input

Open or closed-loop speed control is also possible with DC fans that have a separate control input. So a control voltage or a pulse-width modulated signal can be used to vary the speed. These options are used primarily in devices that have the appropriate standard interfaces and require varied fans depending on the load.

DC fans - specials

Technical information



3. Speed signal

DC fans with speed signal.

The integrated "electronic tachometer" continuously provides an actual speed signal for external evaluation. A very simple signal evaluation on the customer side informs the user of the current fan speed at all times. The speed signal is provided by a separate wire.

4. Alarm signal

For applications that require monitored fan operation with an alarm signal, ebm-papst offers a number of alarm signals variants. Depending on the type of fan in question, the signal will either be static, already evaluated, or a continuous, interface-compatible, high or low signal. The alarm signal is provided by a separate wire.

5. Turbo drives

Fans with three-phase EC drives and microprocessor-controlled motor electronics. The torque of these three-phase motors, which is virtually independent of the rotor position, allows the fan to run very smoothly. The speed of these fans can be controlled over a very wide speed range by means of PWM, analog voltage, or temperature. Optionally, the fans can be supplied with reversible direction of rotation and active brake operation.

6. Vario-Pro fans

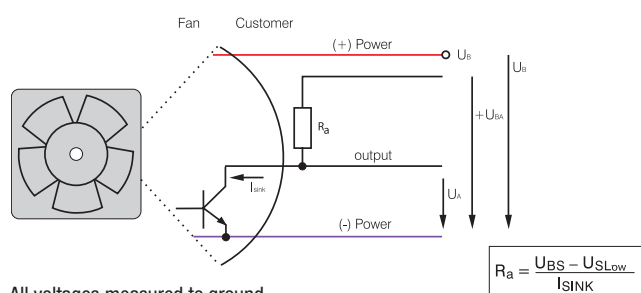
This high-end fan concept by ebm-papst with programmed intelligence and customer-specific integrated functions makes your electronics cooling even more versatile and competitive. Vario-Pro provides greater economy for all demanding cooling tasks – especially those that require greater safety, more flexibility, and intelligent features like an alarm function, speed control, etc.

The key to the success of Vario-Pro is: Tailor-made software instead of permanently installed hardware, because software modules programmed for motor control and application intelligence do the work that used to be performed by analog components in the past. This central control unit of the Vario-Pro comprises a microcontroller and an EEPROM, where all its features are stored.

7. Protection against environmental conditions

Some applications place particular demands on the fans' resistance to environmental conditions, such as dust, moisture, water, and salt. ebm-papst offers solutions for adapting fans to these conditions.

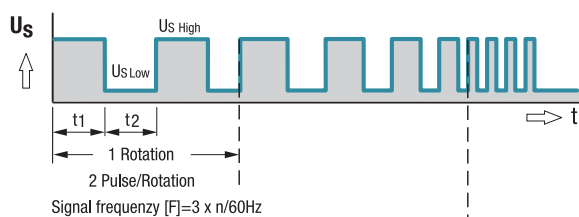
- Speed-proportional, square-wave signal for external monitoring of the fan motor speed
- 2, 3, or 6 pulses per revolution
- Open-collector signal output
- Extremely wide operating voltage range
- Easy adaptation to user interface
- Connection via separate cable
- The sensor signal also serves as a major comparison variable for setting and maintaining the setpoint speed for interactive or controlled cooling with one or more interconnected fans.



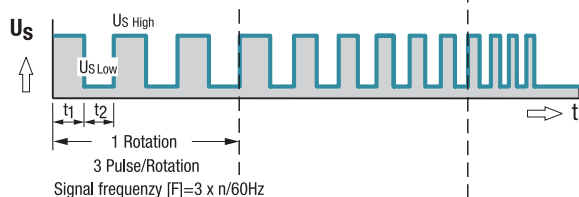
All voltages measured to ground.
External load resistor R_a / U_S / U_{BS} required.

Signal output voltage

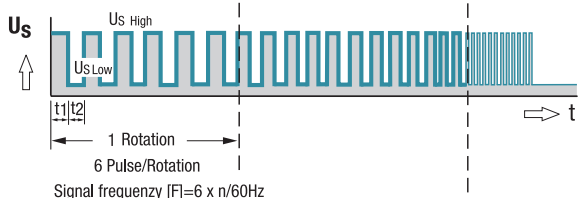
Standard signal for all models (exceptions see below)



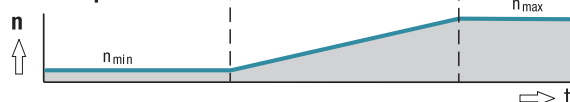
For multi options control input and 4100 NH7 and NH8



All TD Fans e.g. 6300 TD



Fan speed

Subject to change

Available on request:

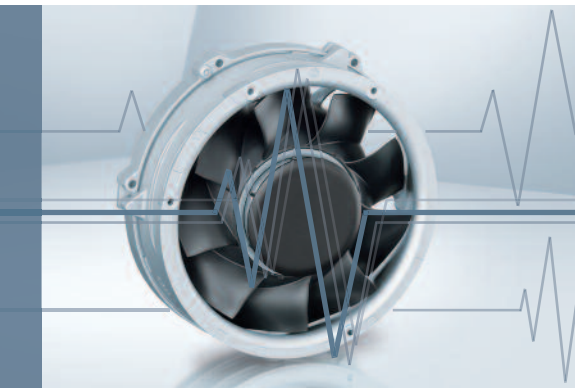
- Electrically isolated speed signal circuit
- Varying voltage potentials for power and logic circuit

Signal data	Speed signal U _S Low	Condition: I _{sink}	Speed signal U _S High	Condition: I _{source}	Tach operating voltage U _{BS} max.	Admissible sink current I _{sink} max.	Pulses per revolution	Fan description Basic type
Type	VDC	mA	VDC	mA	VDC	mA		Page
5112 N	≤ 0.4	2	≤ 15	0	5	20	2	66
5114 N / 5118 N	≤ 0.4	2	≤ 60	0	60	20	2	66
5300	≤ 0.4	2	≤ 60	0	60	4	2	67
5300 TD	≤ 0.4	2	≤ 60	0	60	20	6	68
7112 N / 7118 N	≤ 0.4	2	≤ 60	0	60	20	2	69
7114 N	≤ 0.4	2	≤ 30	0	30	20	2	69
7200 N	≤ 0.4	2	≤ 15	0	15	20	2	70
6400	≤ 0.4	2	≤ 60	0	60	20	2	71
6300 TD	≤ 0.4	2	≤ 60	0	60	20	6	75
6300 N	≤ 0.4	2	≤ 60	0	60	20	6	76
6300 NTD	≤ 0.4	2	≤ 60	0	60	20	6	77
6300	≤ 0.4	2	≤ 60	0	60	20	2	78
DV 6300 TD	≤ 0.4	2	≤ 60	0	60	20	6	80
2200 FTD	≤ 0.4	2	≤ 60	0	60	20	6	81
RL 48	≤ 0.4	2	≤ 30	0	30	4	2	97
RL 65	≤ 0.4	2	≤ 30	0	30	4	2	98
RL 90 N	≤ 0.4	2	≤ 30	0	30	4	2	99
RLF 100	≤ 0.4	2	≤ 30	0	30	4	2	100
RG 90 N	≤ 0.4	2	≤ 30	0	30	4	2	101
RG 125 N	≤ 0.4	2	≤ 30	0	30	4	2	102
RG 140 N	≤ 0.4	3	≤ 60	0	60	4	2	103
RG 160 N	≤ 0.4	2	≤ 30	0	30	20	2	104
RG 160 NTD	≤ 0.4	2	≤ 60	0	60	20	6	105
RG 190 TD	≤ 0.4	2	≤ 60	0	60	20	6	106
RG 220 TD	≤ 0.4	2	≤ 60	0	60	20	6	107
RG 225 TD	≤ 0.4	2	≤ 60	0	60	20	6	108
RET 97 TD	≤ 0.4	2	≤ 60	0	60	20	6	109
REF 100	≤ 0.4	2	≤ 30	0	30	4	2	110
RER 120 TD	≤ 0.4	2	≤ 60	0	60	20	6	112
RER 133 TD	≤ 0.4	2	≤ 60	0	60	20	6	117
RER 160 NTD	≤ 0.4	2	≤ 60	0	60	20	6	119
REF 175 TD	≤ 0.4	2	≤ 60	0	60	20	6	120
RER 175 TD	≤ 0.4	2	≤ 60	0	60	20	6	121
RER 190 TD	≤ 0.4	2	≤ 60	0	60	20	6	122
RER 220 TD	≤ 0.4	2	≤ 60	0	60	20	6	128
RER 225 TD	≤ 0.4	2	≤ 60	0	60	20	6	129
Subject to change								

Note:

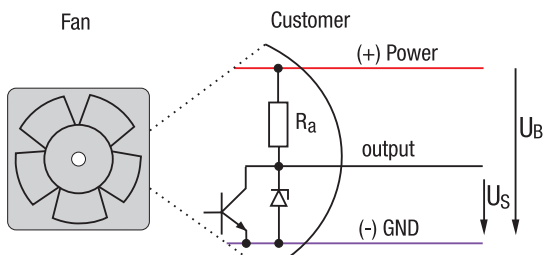
Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

Speed signal /12



- Speed-proportional, square-wave signal for external monitoring of the fan motor speed
- 2, 3, or 6 pulses per revolution
- TTL-compatible
- Integrated pull-up resistor
- Connection via separate cable
- The sensor signal also serves as a major comparison variable for setting and maintaining the setpoint speed for interactive or controlled cooling with one or more interconnected fans.

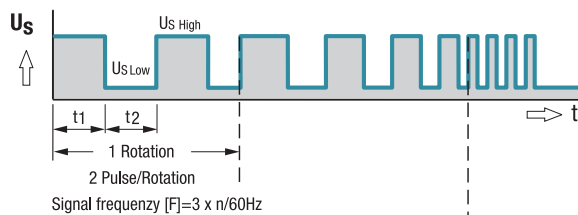
Electrical hookup



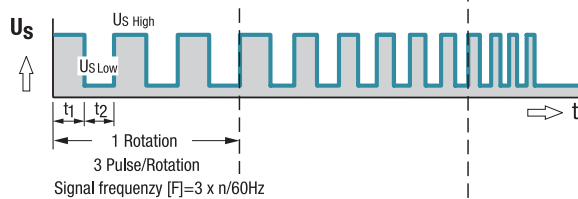
All voltages measured to ground.

Signal output voltage

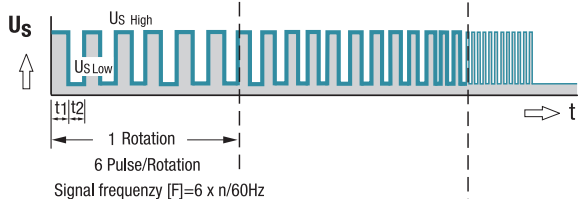
Standard signal for all models (exceptions see below)



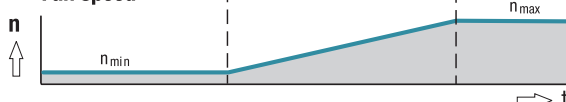
For multi options control input and 4100 NH7 and NH8



All TD Fans e.g. 6300 TD



Fan speed



Signal data	Speed signal $U_{S\text{ Low}}$	Condition: I_{sink}	Speed signal $U_{S\text{ High}}$	Condition: I_{source}	Admissible sink current $I_{\text{sink max}}$	Fan description Basic type
Type	VDC	mA	VDC	mA	mA	Page
614 N/12 GM	≤ 0.4	1	2.5–5.5	1	1	39
618 N/12 N	≤ 0.4	1	2.5–5.5	1	1	39
8412 N/12 H	≤ 0.4	1	2.5–5.5	1	1	44
4412 F/12 GM	≤ 0.4	1	2.5–5.5	1	1	53
4418 F/12	≤ 0.4	1	2.5–5.5	1	1	53
4312 /12 M	≤ 0.4	1	2.5–5.5	1	1	56
4314 /12	≤ 0.4	1	2.5–5.5	1	1	56
4182 N/12 X	≤ 0.4	1	2.5–5.5	1	1	60
Subject to change						

Note:

With these fan options, deviations in regard to temperature range, voltage range and power consumption are possible compared with standard fan data.

Available on request:

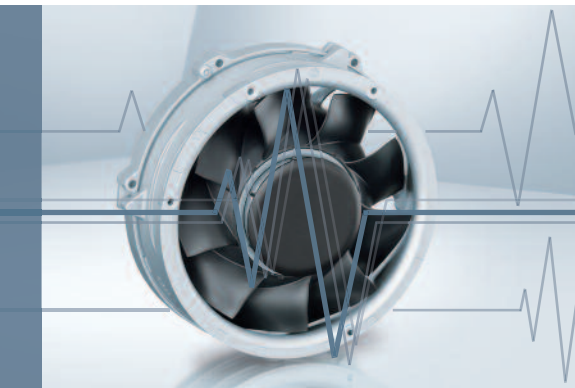
- Electrically isolated speed signal circuit
- Varying voltage potentials for power and logic circuit

Signal data		Speed signal U _S Low	Condition: I _{sink}	Speed signal U _S High	Condition: I _{source}	Admissible sink current I _{sink} max.	Fan description Basic type
Type	VDC	mA	VDC	mA	mA	Page	
7214 N/12	≤ 0.4	2	2.5–5.5	1	≤ 20	70	
6424/12 H	≤ 0.4	2	2.5–5.5	1	≤ 20	71	
DV 6424/12	≤ 0.4	2	4.5–5.25	2	≤ 12	73	
DV 6448/12	≤ 0.4	2	4.5–5.25	2	≤ 12	73	
RG 125-19/12 N/12	≤ 0.4	1	2.5–5.5	1	≤ 1	103	
RG 160-28/12 N/12	≤ 0.4	2	2.5–5.5	1	≤ 5	104	
RG 160-28/18 N/12	≤ 0.4	2	2.5–5.5	1	≤ 20	104	
RER 125-19/12 N/12	≤ 0.4	1	2.5–5.5	1	≤ 1	116	
RER 160-28/12 N/12	≤ 0.4	2	2.5–5.5	1	≤ 5	118	
RER 160-28/18 N/12	≤ 0.4	2	2.5–5.5	1	≤ 20	118	
Subject to change							

Note:

Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

Alarm signal /17



- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous high signal during trouble-free operation within the permissible voltage range.
- Low signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to high.

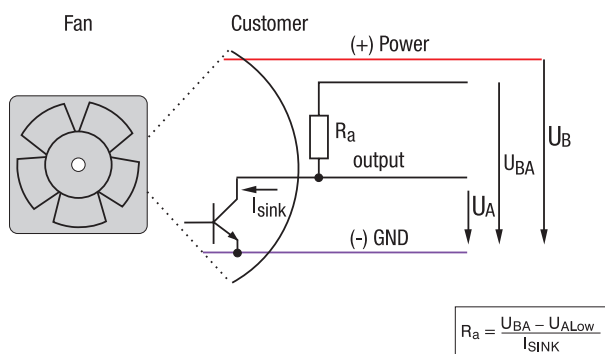
Alarm signal data	Alarm output voltage U_A Low		Condition: $I_{sink} =$	Alarm output voltage U_A High		Condition: I_{source}	Alarm operating voltage U_{BA} max.	Max. permissible sink current	Alarm startup delay time t_6	Condition:	Speed limit n_G	Fan description Basic type
	VDC			VDC								
Type	VDC		mA	VDC		mA	VDC	mA	s		min^{-1}	Page
8318 /17	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	1500 ± 100	46
8318 /17 H	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	1500 ± 100	46
4318 /17	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	850 ± 100	56
4184 N /17 X	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	1500 ± 100	60

Subject to change

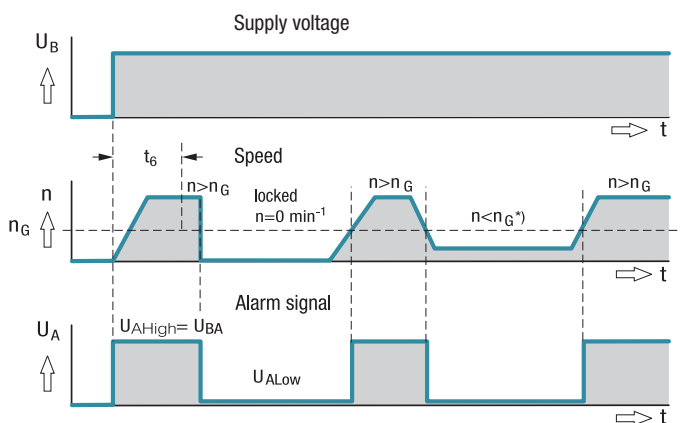
Note:

Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

Electrical hookup



All voltages measured to ground.
External load resistor R_a from U_A to U_{BA} required.



t_6 = Alarm signal suppression during startup.
* $n < \text{speed limit } n_G$ by braking or locking.

Available on request:

- Integrated signal storage for subsequent recognition of short-term faults (latch).
- Alarm circuit open collector or TTL.
- Electrically isolated for maximum device safety

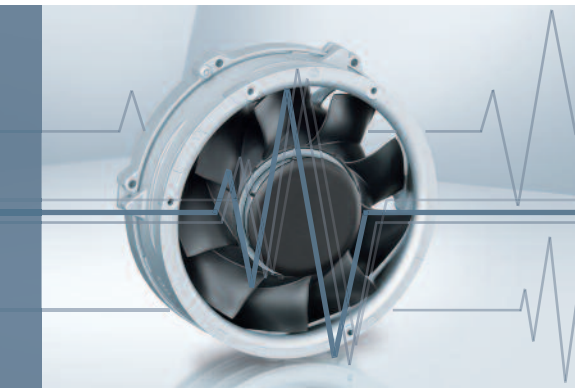
Defects in the power circuit do not affect the alarm circuit.

Alarm signaldata	Alarm output voltage U_A Low	Condition:	Condition: $I_{\text{sink}} =$	Alarm output voltage U_A High	Condition:	Condition: I_{source}	Alarm operating voltage U_{BA} max.	Max. permissible sink current	Alarm startup delay time t_G	Condition:	Speed limit n_G	Fan description Basic type
Type	VDC		mA	VDC		mA	VDC	mA	s		min^{-1}	Page
4312/17 MT VARIOFAN	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	1500 ± 100	57
4312/17 T VARIOFAN	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	1500 ± 100	57
4314/17 T VARIOFAN	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	1150 ± 100	57
4318/17 T VARIOFAN	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	20	≤ 15	*	850 ± 100	57
7214 N/17	≤ 0.4	$n < n_G$	2	≤ 60	$n > n_G$	0	60	15	≤ 15	*	1330 ± 60	70
Subject to change										* After switching on U_B		

Note:

Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

Alarm signal /19



- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous low signal during trouble-free operation within the permissible voltage range.
- High signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to low.

Alarm signal data	Alarm output voltage U_A Low	Condition:	Condition: $I_{\text{sink}} =$	Alarm output voltage U_A High	Condition:	Condition: I_{source}	Alarm operating voltage U_{BA} max.	Max. permissible sink current	Alarm startup delay time t_6	Condition:	Speed limit n_G	Fan description Basic type
	VDC		mA	VDC		mA	VDC	mA	s		min^{-1}	Page
8314/19 H	≤ 0.4	$n > n_G$	2	≤ 60	$n < n_G$	0	60	20	≤ 15	*	1500 ± 100	46
4312/19	≤ 0.4	$n > n_G$	2	≤ 60	$n < n_G$	0	60	20	≤ 15	*	1500 ± 100	56
7214 N/19	≤ 0.4	$n > n_G$	2	≤ 60	$n < n_G$	0	60	10	≤ 15	*	1800 ± 20	70
RLF 100-11/14/19	≤ 0.4	$n > n_G$	2	≤ 28	$n < n_G$	0	28	10	≤ 15	*	1900 ± 100	100
RER 101-36/18N/19 HH	≤ 0.4	$n > n_G$	2	≤ 28	$n < n_G$	0	28	10	≤ 15	*	1900 ± 100	111
Subject to change										* After switching on U_B		

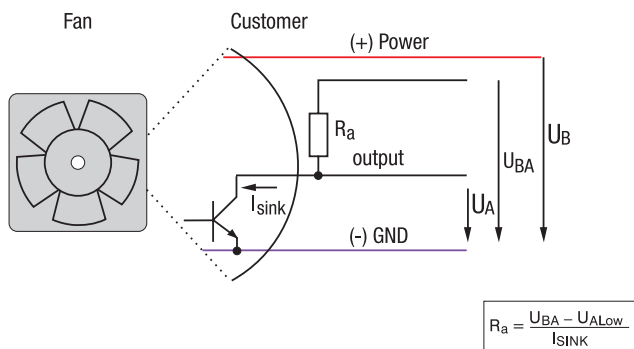
Note:

Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

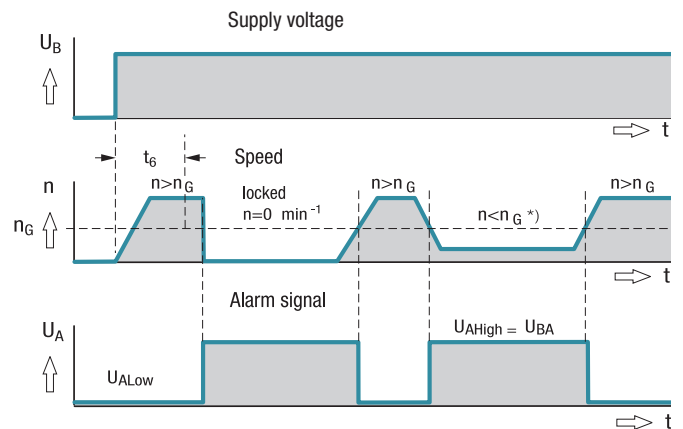
Available on request:

- Integrated signal storage for subsequent recognition of short-term faults (latch).
- Alarm circuit open collector or TTL.
- Electrically isolated for maximum device safety; Defects in the power circuit do not affect the alarm circuit.

Electrical hookup

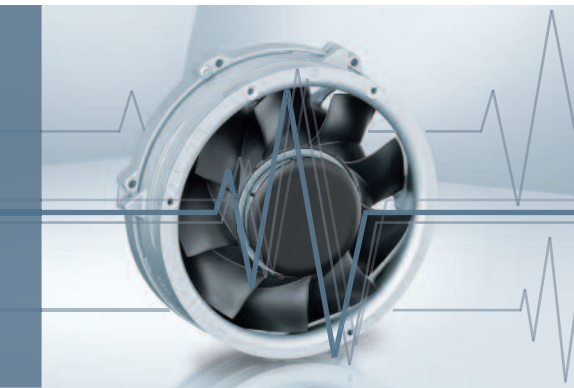


All voltages measured to ground
External load resistor R_A from U_A to U_{BA} required.



Alarm signal /37

Go / NoGo alarm



- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous high signal during trouble-free operation within the permissible voltage range.
- Low signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to high.

Alarm signal data		Alarm output voltage U_A Low	Condition:	Condition: $I_{\text{sink}} =$	Alarm output voltage U_A High	Condition:	Condition: I_{source}	Alarm operating voltage U_{BA} max.	Max. permissible Sink current I_{sink}	Alarm delay time t_d	Condition:	Speed limit n_G	Fan description Basic type
Type	VDC			mA	VDC		mA	VDC	mA	s		min^{-1}	Page
8412 N/37 GMLV	≤ 0.4	$n \leq n_G$		2	≤ 28	$n > n_G$	0	28	10	< 1	*	0	45
3412 N/37 GV	≤ 0.4	$n \leq n_G$		2	≤ 28	$n > n_G$	0	28	10	< 1	*	0	49

Subject to change

* After switching on U_B

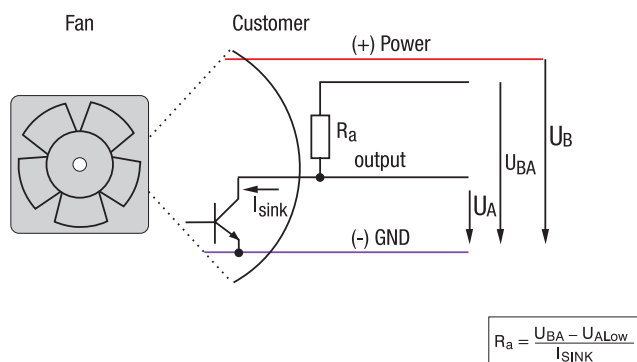
Note:

Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

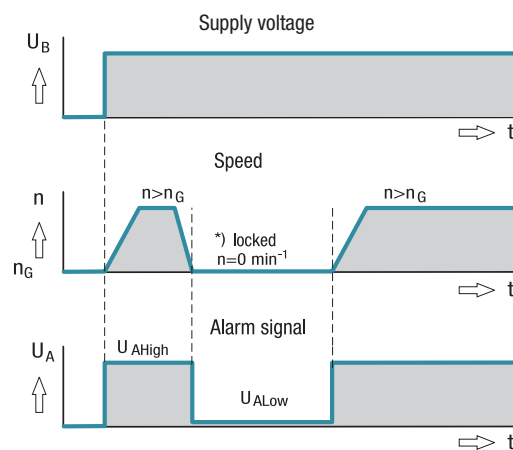
Available on request:

- Alarm circuit TTL compatible.

Electrical hookup

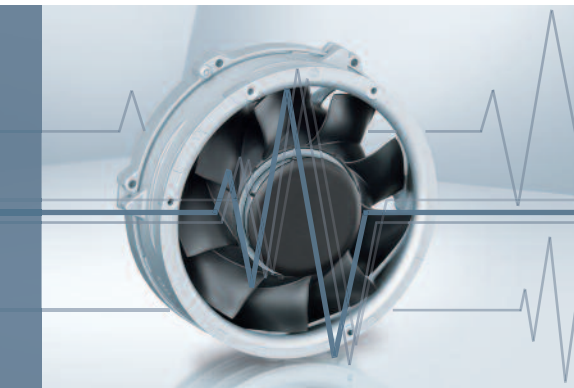


All voltages measured to ground
External load resistor R_A from U_A to U_{BA} required.



Alarm signal /39

Go / NoGo alarm



- Alarm signal for speed monitoring
- Signal output via open collector
- The fan emits a continuous low signal during trouble-free operation within the permissible voltage range.
- High signal when speed limit is not reached
- After elimination of the fault, the fan returns to its setpoint speed; the alarm signal reverts to low.

Alarm signal data	Alarm output voltage U_A Low	Condition:	Condition: $I_{sink} =$	Alarm output voltage U_A High	Condition:	Condition: I_{source}	Alarm operating voltage U_{BA} max.	Max. permissible Sink current I_{sink}	Alarm delay time t_d	Condition:	Speed limit n_G	Fan description Basic type
	VDC		mA	VDC		mA	VDC	mA	s		min ⁻¹	Page
412/39	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	33
612 F/39 H	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	36
614 N/39 M	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	39
618 N/39 N	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	39
3412 N/39 H	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	48
3414 N/39 HH	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	48
4412 F/39 GL	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	53
4412 F/39 M	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	53
4414 F/39	≤ 0.5	$n > n_G$	2	≤ 28	$n = n_G$	0	28	10	< 1	*	0	53
4414 FN/39 H	≤ 0.4	$n > n_G$	2	≤ 30	$n = n_G$	0	30	4	< 1	*	0	55

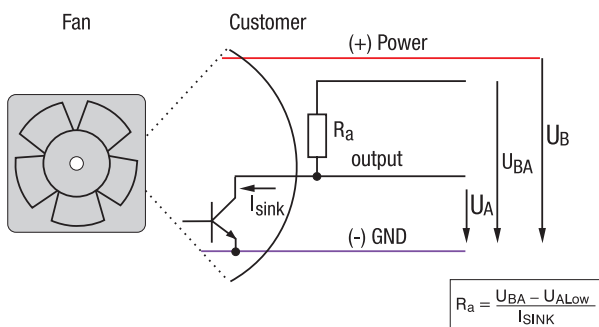
Subject to change

* After switching on U_B

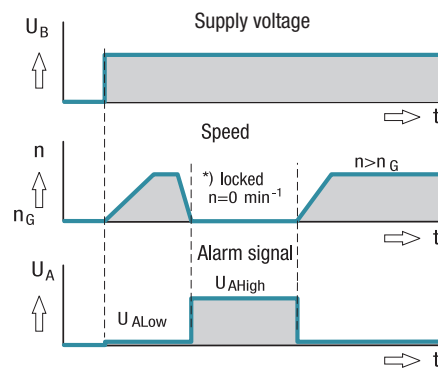
Note:

Fans that come with these fan specials could have variations with respect to the temperature range, voltage range, and power consumption compared to standard fans without specials.

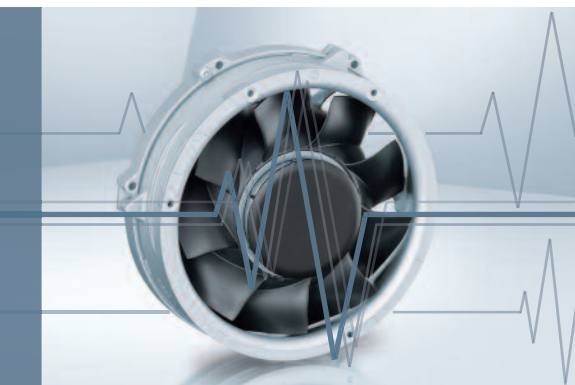
Electrical hookup



All voltages measured to ground
External load resistor R_a from U_A to U_{BA} required.



* Speed limit $n_G = 0$ rpm



- "Software instead of hardware" aptly describes the unique fan concept. Fans come equipped with tailor-made intelligence for cooling electronics.
- The main advantages are flexible configuration based on software, faster availability, sampling from the factory, and the ability to supply customer-specific solutions in any quantity.

Vario-Pro features

External speed setting

- Speed setting via temperature, PWM or analog control voltage
See page 178 (Speed setting)
- Description of speed curve with up to 14 selectable interpolation points.
Linear interpolation between the points.
- 0 rpm speed possible
- Sensor break detection: If the sensor signal is lost, the fan will operate at any programmable speed.

Alarm and tachometer functions

- Optional alarm and/or tachometer function
- Selectable alarm speed limit (with hysteresis) and alarm delay time
- Storing of the alarm signal
- Delay only when starting or permanently active
- "High" or "low" output signal for alarm
- Optional alarm if temperature sensor fails
- Optional alarm in case of overtemperature

Motor management

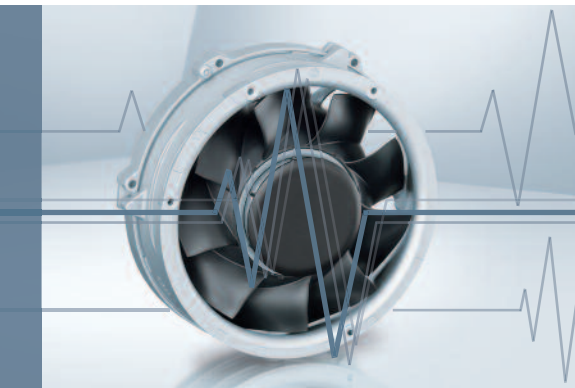
- High control accuracy due to digital motor management
- Increased operating efficiency due to optimum coordination of motor hardware and software

Fan series	Page
620	37
8400 N	44
8300	46
8200 J	47
3400 N	48
3300 N	50
3200 J	51
3250 J	52
4400 FN	55
4300	56
4100 N	60
4100 NH...NH6	61

Fan series	Page
4100 NH 7-8	62
DV 4100	63
5200 N	64
DV 5200	65
5100 N	66
5300	67
7100 N	69
7200 N	70
6400	71
DV 6400	73
6300 N	76
6300 NTD	77

Fan series	Page
6300	78
DV 6300 TD	80
RL 90 N	99
RLF 100	100
RG 90 N	101
RG 125 N	102
RG 140	103
RG 160 N	104
REF 100	110
RER 101 N	111
RER 125 N	116
RER 160 N	118

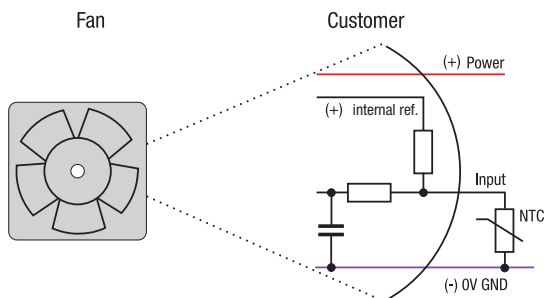
Speed setting via temperature sensor



- The control variable is a temperature sensor that is either integrated in the fan or connected to an additional control cable.

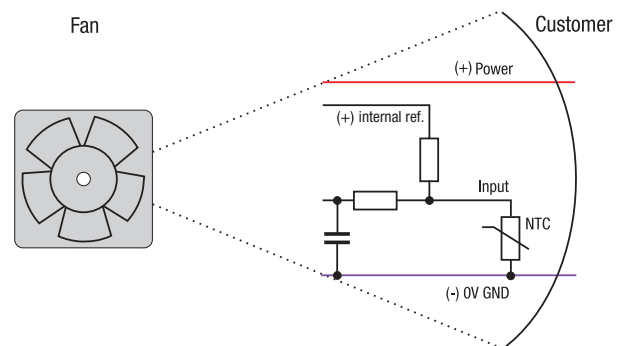
External temperature sensor type T

- Ext. NTC resistor type LZ370 (p. 257) is required (not included in the standard scope of delivery)

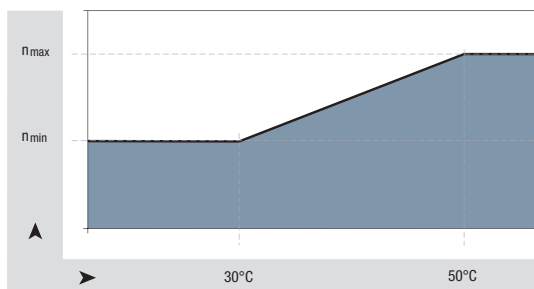


Internal temperature sensor type I

- NTC integrated in the fan hub



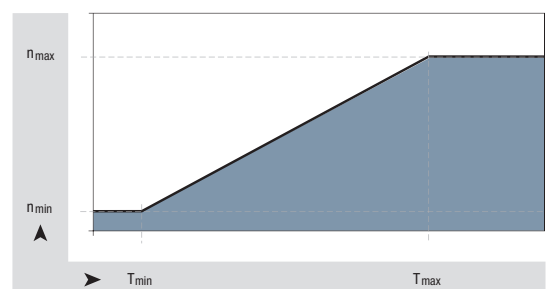
Standard speed/temperature curve for type T and type I



$$n_{\min} \approx \frac{1}{2} n_{\max}$$

$$T_{\min} \approx 30^{\circ}\text{C}; T_{\max} = 50^{\circ}\text{C}$$

Optionally available with selectable temperature/speed curve

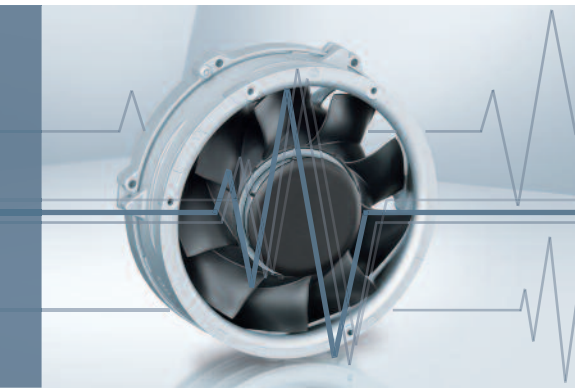


$$n_{\min} \approx 800 \frac{1}{\text{min}} \quad n_{\max} \text{ based on model}$$

$$T_{\min} \approx 5^{\circ}\text{C} \quad T_{\max} \leq 85^{\circ}\text{C, based on model}$$

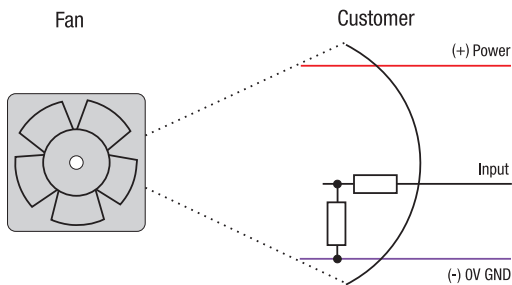
Speed setting via control voltage or PWM signal

- The control variable is a PWM signal or analog control voltage.



Speed setting via analog control voltage type A

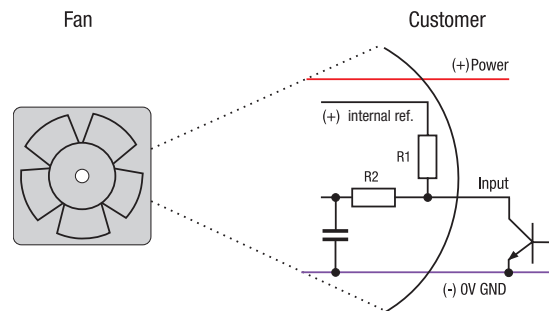
- Standard control range 0 ... 10 V



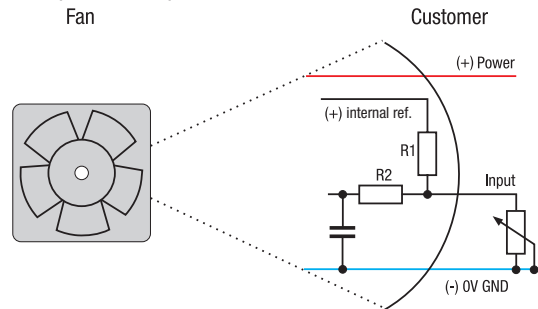
Typical input resistance > 10 k

Speed setting via PWM type P

- Standard PWM signal in two versions
 - a) PWM frequency, mainly 1 ... 10 kHz (0-100%), Open-collector input
 - b) Four-wire interface according to Intel specifications for 12 VDC fans, PWM frequency 25 kHz, incl. speed signal /2



- Optional with potentiometer

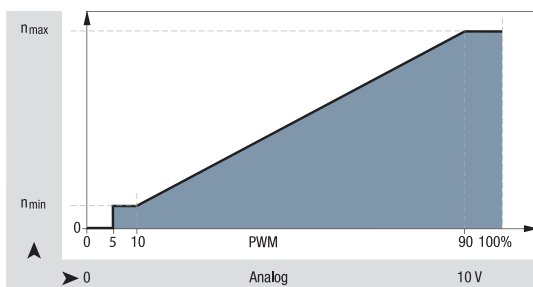


Internal reference = + 5 V

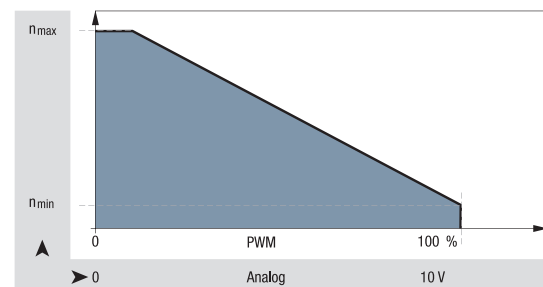
R1 typical 4.7...10 kΩ

R2 typical 100 kΩ

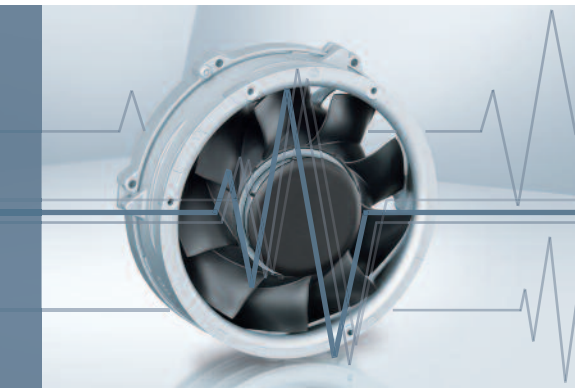
Standard P / A curve



Optionally available with selectable P / A speed curve

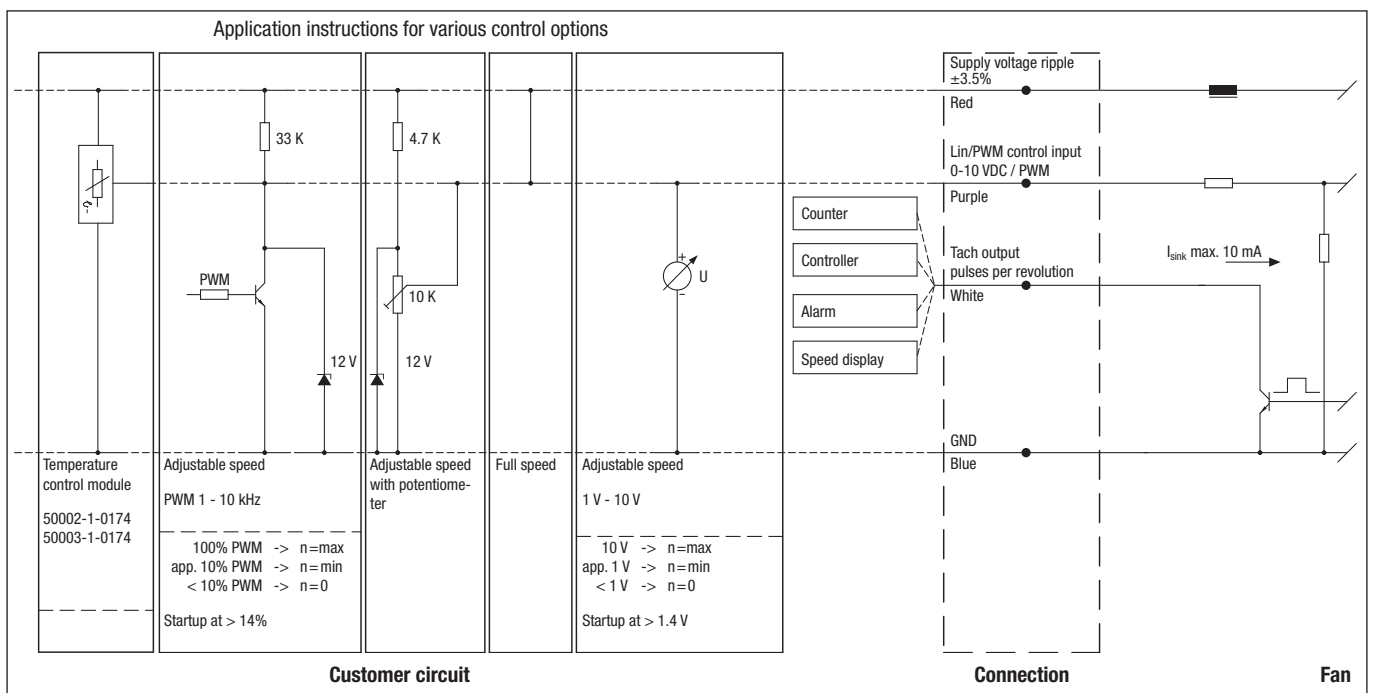


Speed setting via Control input



- Customer can operate input either with PWM signal, analog voltage, external temperature control module, or resistor.
- The control signal speed characteristics of the fan differ from the standard curve of the A and P inputs (see p. 179).
- To reach the maximum speed, the control cable must be connected to the U_B .
- The control input is usually combined with an open collector tachometer (type /2, see page 168).

Speed setting via multi-option control input type 0



Wire	Connection	Color	Assignment/function
1	+	Red	Supply voltage ripple ±3.5%
	GND	Blue	GND

Wire	Connection	Color	Assignment/function
1	Tach	White	Tach output:
			3 Impulse/revolution
	0-10 V / PWM	Purple	Control input (impedance 100 kV)

Protected fans

against environmental conditions

- Capable of satisfying special requirements for a broad range of applications
- Resistance of fans to environmental conditions such as dust, splashing water, humidity, spray water, and salt spray.
- Competent solutions to adapt fans to environmental conditions.



Moisture protection

A coat of paint over the motor and circuit board protect the fans against spray water and condensation.

Degree of protection IP 54 / IP 68*

In the degree of protection IP 54, the motor and circuit boards are coated and therefore protected against spray water and moisture.

The degree of protection IP 68 is important for ebm-papst products, as it ensures a high degree of protection for the encapsulated motor and electronics against foreign bodies and water, while protecting the user against potential hazards upon contact. Degrees of protection higher than IP 68 are possible on request.

Solutions that are available and are used may differ depending on the fan size. We would be glad to develop solutions tailored to the demands of your application.

Salt spray protection

Salt spray represents one of the most difficult requirements for product durability. ebm-papst has the technology to protect fans and blowers from salt spray reliably and for the long term.

Stainless steel bearings

Special bearings made of stainless steel provide additional protection.

Degree of protection – IP code*

Protection against foreign bodies and accidental contact (first digit)		Water protection (second digit)	
X	No protection	X	No protection
1	Protection against foreign objects > 50 mm (back of the hand)	1	Protection against dripping water or condensation
2	Protection against foreign objects > 12 mm (finger)	2	Protection against dripping water, fans tilted 15° from vertical
3	Protection against foreign objects > 2.5 mm (tool)	3	Protection against sprayed water up to 60° from vertical
4	Protection against foreign objects > 1 mm (wire)	4	Protection against sprayed water from all sides
5	Protection against dust in harmful quantities	5	Protection against low-pressure water jets
6	Dust-proof	6	Protection against high-pressure water jets
		7	Protection against temporary submersion (15 cm - 1 m)
		8	Protection against continuous submersion

* IP = International degree of protection marking

For AC-fans max. IP 65 available



ACmaxx / EC fans



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ACmaxx / EC fans

Technical information about ACmaxx / GreenTech EC tubeaxial fans



AC

ACmaxx

ACi

Progress made by ebm-papst

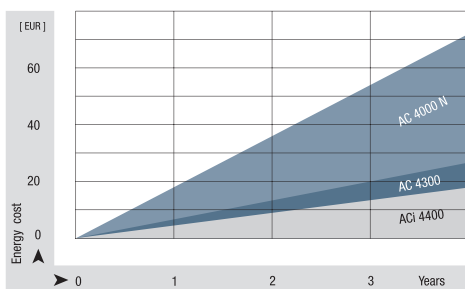
The best example: The ACmaxx fans from ebm-papst that offer substantial benefits thanks to an ingenious yet simple improvement over conventional AC fans.

The aim in developing the new ACmaxx series was to raise the technical standard of the conventional AC fan significantly and in the process facilitate a transition to new technology by maintaining the same fan sizes. In short, to make sure that the fans can be replaced 1:1 without any changes to the peripherals or voltage situation.

ebm-papst offers two generations of ACmaxx products that meet different needs.

What the ACmaxx and GreenTech EC compact fans have in common: Energy efficiency

A drive concept based on state-of-the-art GreenTech EC technology with outstanding motor efficiency. Compared to AC fans of the same size, ACmaxx energy consumption is up to 77% lower – for greater cooling capacity! The energy savings alone means that the products pay for themselves after only a few months. The savings over the entire service life, especially in systems with multiple fans, is considerable.

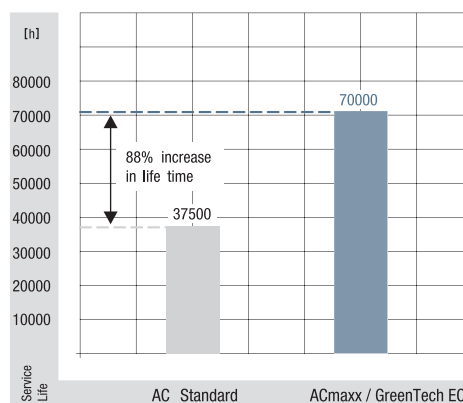


Independent of the power frequency and line voltage

The ACmaxx and GreenTech EC tubeaxial fans are prepared for direct connection to a wide range of AC voltages and frequencies. The speed, and thus important properties of the fan such as air flow and noise, are independent of the power frequency and do not change, even within the defined voltage range. Voltage fluctuations in the power system are automatically compensated for.

Long service life

The efficiency of ACmaxx and GreenTech EC tubeaxial fan motors is up to 75% greater than that of conventional AC fan variants. This not only saves energy, it also means less self-heating of the motor. Especially the bearing system responds positively to the low self-heating. The reason why the fans have a service life that is up to 85% longer! This also extends the service and maintenance intervals significantly. Investments in replacement fans and every more expensive downtime are manageably small.



ACmaxx / EC fans

Technical information about ACmaxx / GreenTech EC tubeaxial fans



Safety

- Safety certifications: UL, CSA and VDE 0805 / EN60950. VDE 0700 / EN60335 on request.
- Our fans have the CE mark of conformity.
- EMC protection:
 - > EN61000-4-4 Level 1 (1 kV or 2 kV) B
 - > EN61000-4-2 Level 8 kV/15 kV or 4 kV/8 kV
 - > EN61000-4-3
 - > EN61000-4-6
 - > EN61000-4-8
 - > EN55022 Class B

The environment

AC fans are extremely common and are used in a wide variety of applications. In control cabinet cooling, beer coolers, cooling cabinets, wood-burning stoves, medical devices – all have different requirements for resistance to environmental conditions. ACmaxx and GreenTech EC tubeaxial fans offer the same features for moisture protection, splash water, and tougher environmental conditions.

Particular design features of the GreenTech EC tubeaxial fan

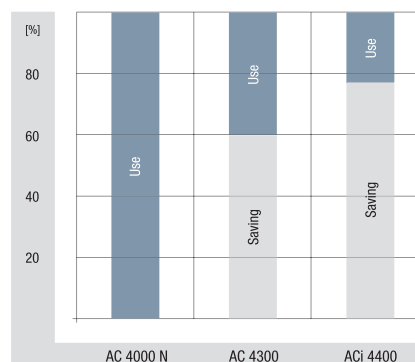
(ACi 4400): GreenTech EC compact fan is more compact!

As large as existing AC fans – and not a bit larger. This is the greatest feature of the new ACi 4400 GreenTech EC tubeaxial fans. Even in the hub area, the fan does not differ from typical 119 x 119 x 38 mm AC fans. Out with the AC, in with the ACi 4400 GreenTech EC tubeaxial fans – it's that simple.



The GreenTech EC tubeaxial fan is more efficient!

ACmaxx saves energy, and the GreenTech EC tubeaxial fan generation saves even more. While an AC fan at 50 Hz can barely reach an overall efficiency of 5-6%, the ACmaxx makes it to about 20-25%. With the new ACi 4400 GreenTech EC tubeaxial fans, a remarkable level of up to 30% is reached. This is the result of the optimization of the entire package made up of the drive, electronics, AC/DC conversion, and aerodynamics. Thus the new GreenTech EC tubeaxial fan series boasts energy savings of almost 75% compared to the corresponding AC fan, thus providing significantly greater savings than the 40% level of the old AC 4300 generation.



The GreenTech EC tubeaxial fan is quieter!

The ACi 4400 GreenTech EC tubeaxial fan is quieter! Quieter than AC fans and quieter than the existing ACmaxx generation. The reason for this is the optimized aerodynamics and the drive, which is optimized for minimum structure-borne noise. Thus the fan is only half as loud at a comparable air performance, and is up to 6 dB(A) quieter at some operating points.

Speed independent of voltage and frequency

For the ACi 4400 GreenTech EC tubeaxial fans, the speed, and thus the flow quantity and operating noise, are independent of the power supply and power frequency.

Versions are available for 115 VAC with a voltage range from 85 to 132 VAC and 230 VAC with a voltage range of 195 to 265 VAC. Operation with DC voltage is also possible. Voltage fluctuations and frequency differences in the power system are compensated for automatically.

ACmaxx / EC fans

Technical information about ACmaxx / GreenTech EC tubeaxial fans



Particular design features of the ACmaxx:

Prepared for all common AC voltages

These models have a very wide voltage range from 85 to 265 VAC – the global voltage range, so to speak. This allows the fan to be used around the world, opening up large savings potentials. In addition to reduced logistics effort and stock keeping, worldwide availability is key. ACmaxx is compatible with every power supply and no switching is needed. From 85 to 265 volts and power frequencies of 50 and 60 Hz. Voltage fluctuations in the power system are automatically compensated for.

Higher performance

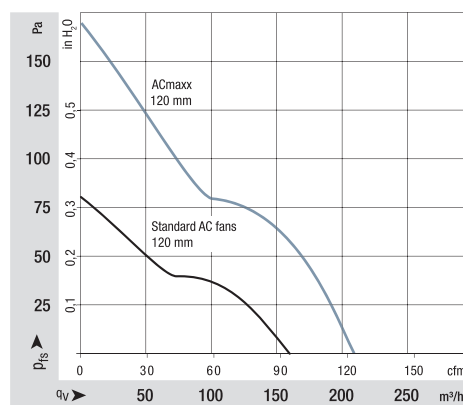
Unlike conventional AC technology, the state-of-the-art drive concept of this fan series is not linked to a fixed power frequency. This allows the motor speed to be increased over a wide range. Thus ACmaxx provides significantly greater air flow and significantly increased pressure.

Greater flexibility

The flexibility of ACmaxx is unique. With its intelligent features, ACmaxx can be adapted individually to the specific application: standby mode, overload mode at peak times, or night reduction all the way to temperature-controlled quiet operation are all possible. From speed monitoring to long-term function checks using an alarm or speed signal

outputs, ACmaxx offers optional interfaces that allow you to monitor an operation easily and quickly.

You can find further information about these fan options in the "Fans specials" chapter, starting on page 161. Or you can simply contact our application engineers to discuss your ideal ACmaxx or GreenTech EC tubeaxial fan.



Fans for AC operation

Overview of air performance

Dimensions mm	Series	Air flow m³/h																		Page
			10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	
□ 80 x 32	AC 8300	80																		188
□ 92 x 38	AC 3200 J	144																		189
□ 119 x 25	AC 4400 FN	205																		190
□ 119 x 32	AC 4300	204																		191
□ 119 x 38	ACi 4400	100...175																		192
Ø 172 x 51	AC 6200 N	350																		193
Ø 130	W1G 130	220...370																		194
Ø 200	W3G 200	560...1065																		196
Ø 250	W3G 250	900...1910																		198
Ø 98.5 x 130	AC 100	40...135																		200

Subject to change

Overview of technically feasible designs

Dimensions				VDE, UL, CSA	SINTEC sleeve bearings / ball bearings	Speed signal	Go / NoGo alarm	Alarm with speed limit	External temperature sensor	Internal temperature sensor	PWM control input	Analog control input	Multi-options control input	Moisture protection	IP >= 54	IP 68	Salt spray protection	Page
	ACmaxx / ACi axial fans																	
	mm	Series							OPTIONAL								P.	
□ 80 x 32	AC 8300	yes	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	188
□ 92 x 38	AC 3200 J	no	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	189
□ 119 x 25	AC 4400 FN	yes	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	190
□ 119 x 32	AC 4300	yes	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	191
□ 119 x 38	ACi 4400	yes	■	–	–	–	–	–	–	–	–	–	•	•	•	•	•	192
Ø 172 x 51	AC 6200 N	yes	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	193
Ø 98.5 x 130	AC 100	*	■	–	–	–	–	–	–	–	–	–	•	•	•	•	•	200

Subject to change

- Not yet available
- Available
- Sleeve bearings
- Ball bearings

* Partially granted, partially in registration stage.

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations.

The special versions are designed for specific customers and projects.

As a rule they are not available off the shelf and are tied to minimum volumes.

Please consult your customer support representative about the feasibility of your special variant.

Max. 80 m³/h

ACmaxx axial fans

□ 80 x 32 mm



- **Material:** Housing: GRP¹⁾ (PBTP)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Universally usable for all power voltages between 85 and 265 VAC
- **Weight:** 325 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

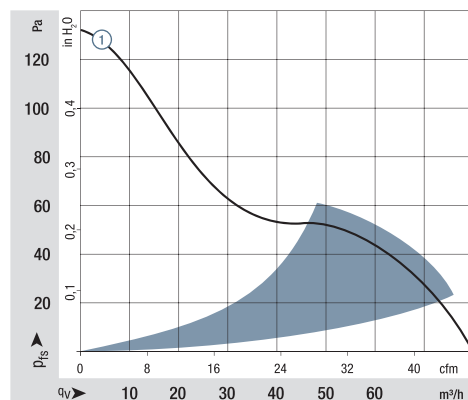
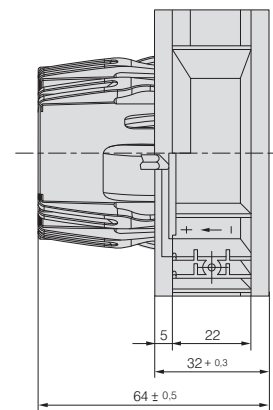
Series AC 8300

Nominal data

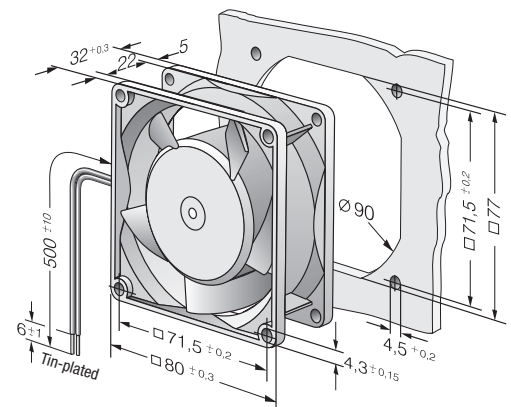
	Air flow	Air flow	Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ pPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VAC	Hz	VAC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
AC 8300 H	80	47	115 / 230	50 / 60	85 ... 265	48	6.2	■ / ■	8.3	5 000	-20...+75	55 000 / 20 000	92 500	92 500	⌚

Subject to change

Speed variants available on request.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 144 m³/h

ACmaxx axial fans

□ 92 x 38 mm



- **Material:** Housing: GRP¹⁾ (PBTP)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Universally usable for all power voltages between 85 and 265 VAC
- **Weight:** 325 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

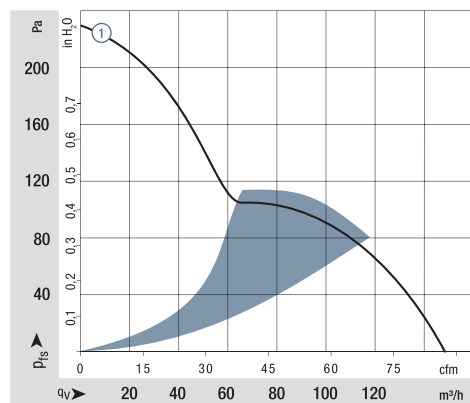
1) Fiberglass-reinforced plastic

Series AC 3200 J

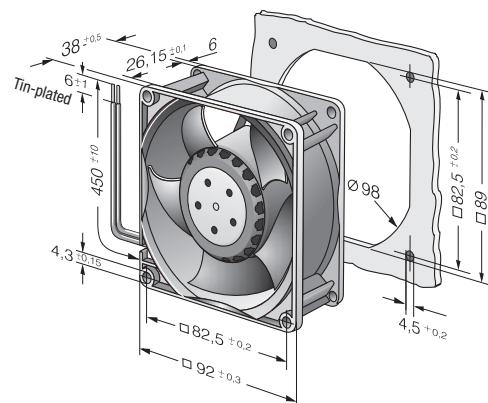
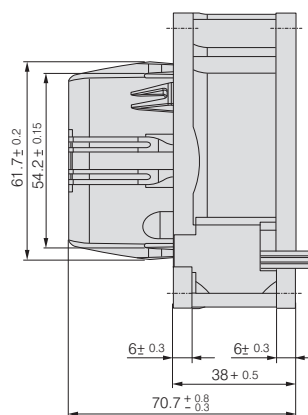
Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VAC	Hz	VAC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
AC 3200 JH	144	85	115 / 230	50 / 60	85 ... 265	55	6.4	■ / ■	12	6 800	-20...+70	70 000 / 35 000	117 500	117 500	①

Subject to change

Speed variants available on request.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. **205** m³/h

ACmaxx axial fans

□ 119 x 25 mm



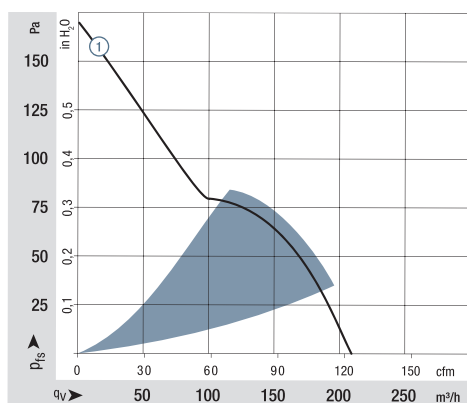
- **Material:** Housing: GRP¹⁾ (PBTP)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** Via single wires AWG 22,
TR 64
- **Highlights:** Universally usable for all
power voltages between
85 and 265 VAC
- **Weight:** 370 g
- **Possible special versions:**
(See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection

1) Fiberglass-reinforced plastic

Series AC 4400 FN													Service life L ₁₀ (40 °C) ebm-papst standard		Service life L ₁₀ (T _{max}) ebm-papst standard		Life expectancy L ₁₀ PC (40 °C) see page 17		Curve
Nominal data	Air flow		Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range								
	Type	m³/h													cfm	VAC	Hz	VAC	
AC 4400 FNN	205	121	115 / 230	50 / 60	85 ... 265	53	6.2	■	12	4 850	-20...+70	60 000 / 30 000	102 500	①					

Subject to change

Speed variants available on request.

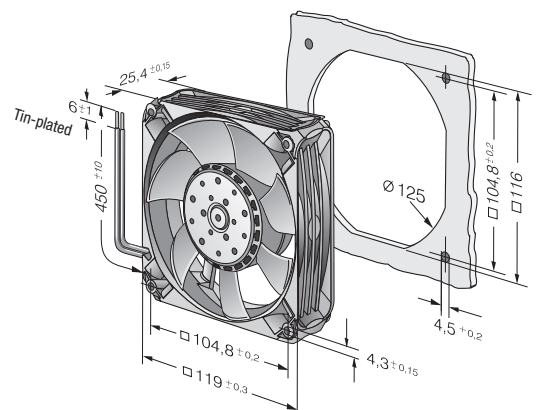
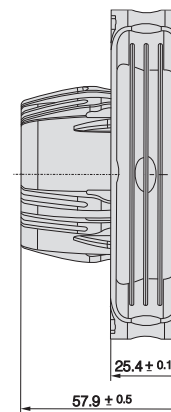


Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{wA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance
from fan axis.

The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.

In the event of deviation from the standard configura-
tion, the parameters must be checked after installation!

For detailed information see
http://www.ebmpapst.com/general_conditions



Max. 204 m³/h

ACmaxx axial fans

□ 119 x 32 mm



- **Material:** Housing: GRP¹⁾ (PBTP)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Universally usable for all power voltages between 85 and 265 VAC
- **Weight:** 325 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 68

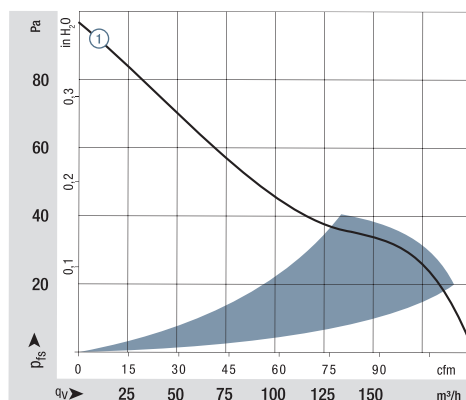
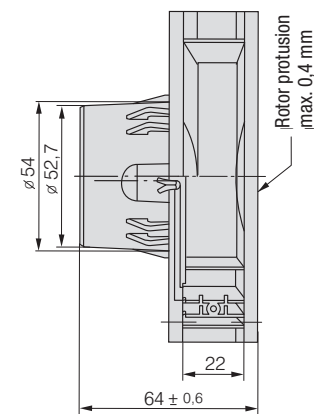
1) Fiberglass-reinforced plastic

Series AC 4300

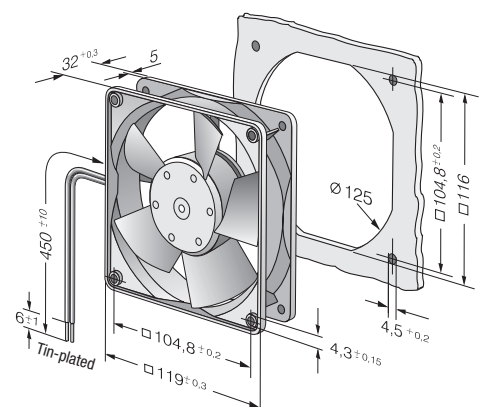
Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ pPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VAC	Hz	VAC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
AC 4300 H	204	120	115 / 230	50 / 60	85 ... 265	51	6.4	■ / ■	12	3 400	-20...+70	45 000 / 22 500	75 500	75 500	①

Subject to change

Speed variants available on request.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 175 m³/h

GreenTech EC tubeaxial fans

□ 119 x 38 mm



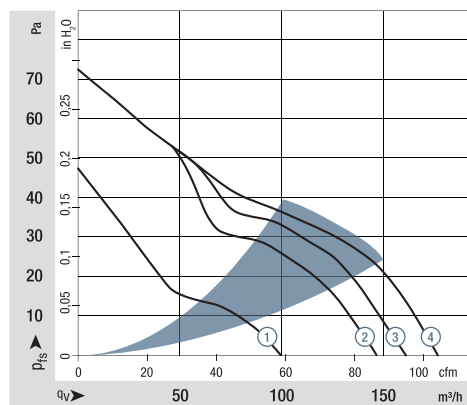
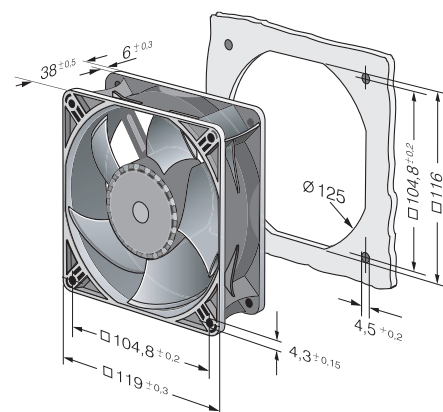
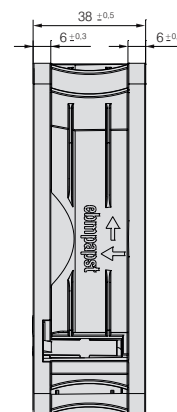
- **Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** with flat plug 2.8 x 0.5, optionally also with exposed external wires
- **Highlights:** Fully integrated converter and fan electronics
- **Weight:** 250 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series ACi 4400

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ pPC (40 °C) see page 17	Curve
Type	m³/h	cfm	VAC	Hz	VAC	dB(A)	Bel(A)	■/■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	
ACi 4420 ML	100	59	230	50 / 60	195...265	25	4.1	■	1.7	1 850	-40...+75	65 000 / 25 000	110 000	110 000	①
ACi 4420 N	147	86	230	50 / 60	195...265	36	4.9	■	2.8	2 700	-40...+75	65 000 / 25 000	110 000	110 000	②
ACi 4420 H	160	94	230	50 / 60	195...265	39	5.1	■	3.2	3 000	-40...+75	65 000 / 25 000	110 000	110 000	③
ACi 4420 HH	175	103	230	50 / 60	195...265	42	5.3	■	4.6	3 300	-40...+75	65 000 / 25 000	110 000	110 000	④
ACi 4410 HH	175	103	115	50 / 60	85...132	42	5.3	■	4.4	3 300	-40...+75	65 000 / 25 000	110 000	110 000	④

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>

Max. 350 m³/h

ACmaxx axial fans

Ø 172 x 51 mm



- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via single wires AWG 22, TR 64
- **Highlights:** Universally usable for all power voltages between 85 and 265 VAC, 50-60 Hz
Housing with grounding lug for screw M4 x 8 (Torx)
- **Weight:** 900 g
- **Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - Go / NoGo alarm
 - Alarm with speed limit
 - External temperature sensor
 - Internal temperature sensor
 - PWM control input
 - Analog control input
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

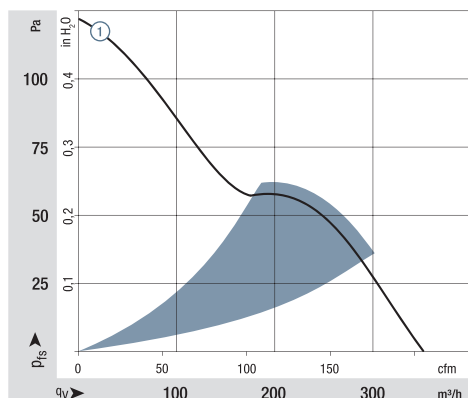
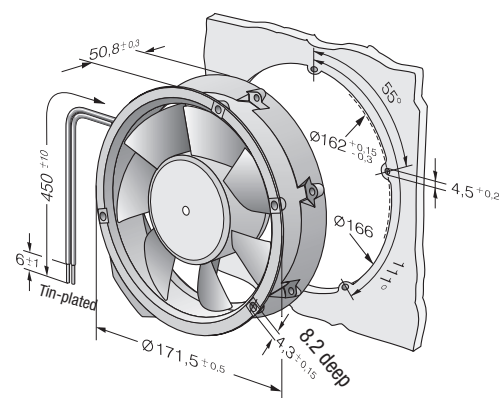
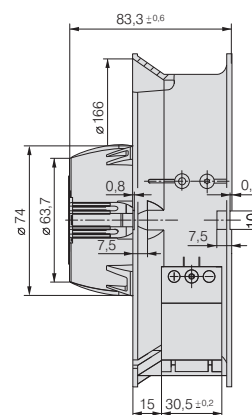
1) Fiberglass-reinforced plastic

Series AC 6200 N

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ IPC (40 °C) see page 17	Curve
Type	m ³ /h	cfm	VAC	Hz	VAC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	Hours	①
AC 6200 NM	350	206	115 / 230	50 / 60	85 ... 265	50	5.7	■ / ■	14	2 850	-20...+70	80 000 / 40 000	135 000		①

Subject to change

Speed variants available on request.



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>

Max. 370 m³/h

Energy-saving axial fans

Ø 130 mm

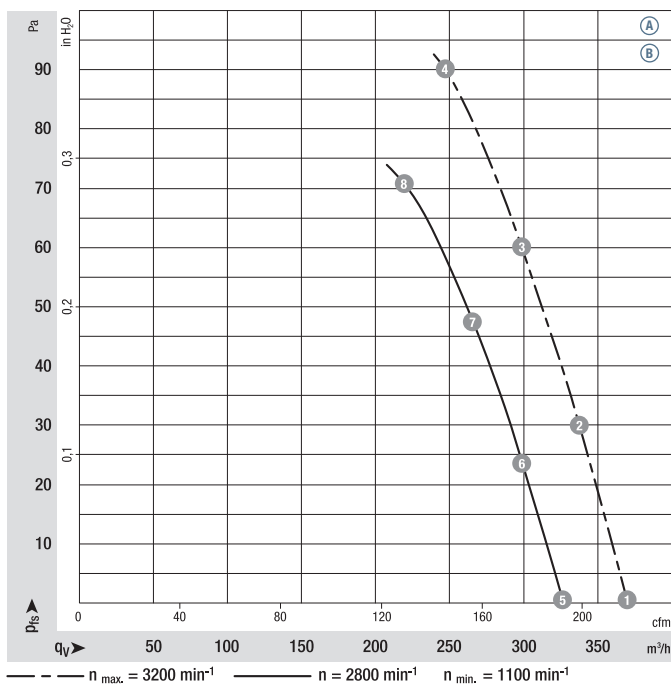


- Material:** Housing: PP plastic, fiberglass-reinforced; Blades: PA plastic, fiberglass-reinforced
- Number of blades:** 7
- Direction of air flow:** "V", exhaust over struts
- Direction of rotation:** Counterclockwise, looking towards rotor
- Degree of protection:** IP 54
- Insulation class:** "B"
- Installation position:** Any
- Condensation drainage holes:** None
- Mode of operation:** Continuous operation (S1)
- Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Frequency	Nominal speed	Max. power consumption ⁽¹⁾	Max. input current ⁽¹⁾	Max. back-pressure	Admissible amb. temp.	Weight	Connection diagram
Type	Motor	VAC	Hz	rpm ⁻¹	W	A	Pa	°C	kg		
W1G130-AA49 -01	M1G 055-AI	Ⓐ 1~115	50/60	3200	24	0.38	90	-30..+60	0.75		p. 264 / J7)
W1G130-AA25 -01	M1G 055-AI	Ⓑ 1~230	50/60	3200	24	0.19	90	-30..+70	0.75		p. 264 / J7)

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

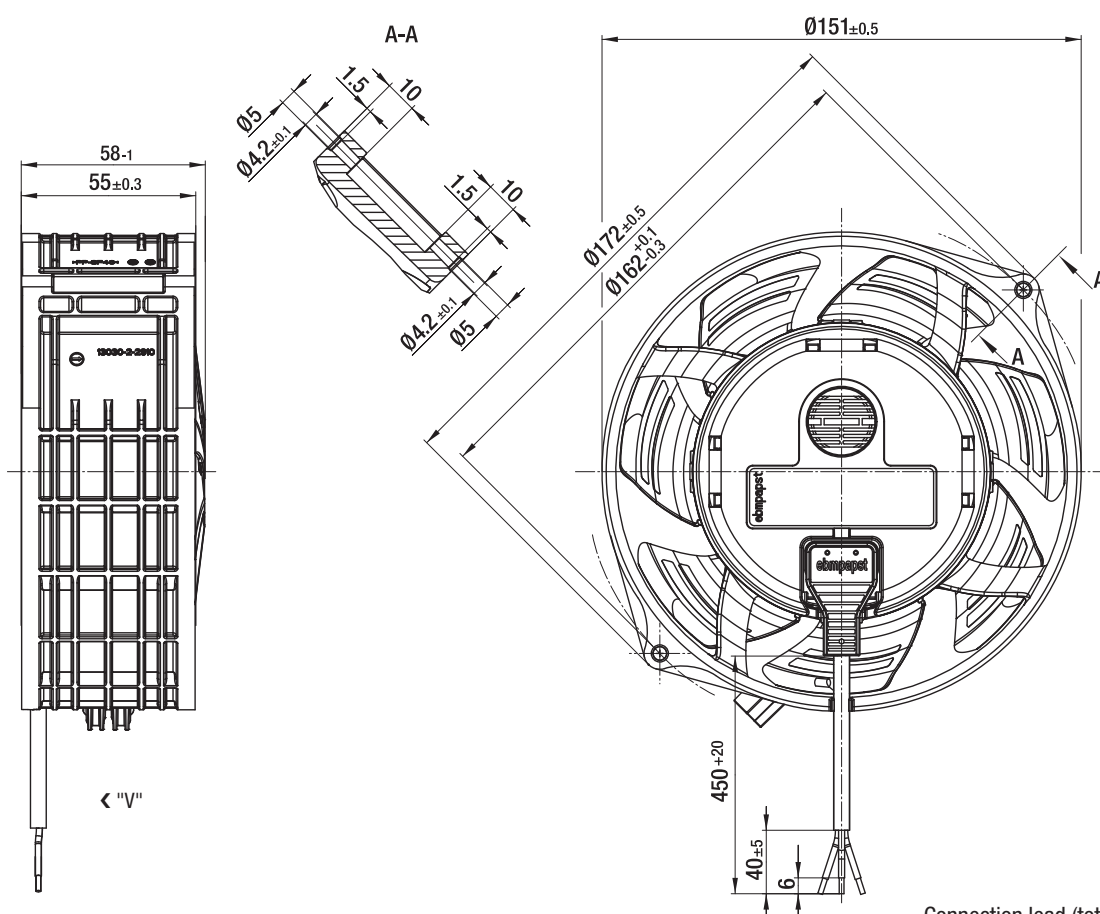
Curves:



	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ 1	3200	23	0.38	63
Ⓐ 2	3200	24	0.38	61
Ⓐ 3	3200	24	0.38	60
Ⓐ 4	3200	24	0.38	63
Ⓐ 5	2800	16	0.26	60
Ⓐ 6	2800	16	0.26	58
Ⓐ 7	2800	16	0.26	57
Ⓐ 8	2800	16	0.26	60
Ⓑ 1	3200	23	0.19	63
Ⓑ 2	3200	24	0.19	61
Ⓑ 3	3200	24	0.19	60
Ⓑ 4	3200	24	0.19	63
Ⓑ 5	2800	16	0.13	60
Ⓑ 6	2800	16	0.13	58
Ⓑ 7	2800	16	0.13	57
Ⓑ 8	2800	16	0.13	60

Air performance measured according to: ISO 5801, installation category A, in ebm-papst full nozzle without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Motor protection:** Via electronics and thermal overload protector
- **Electrical hookup:** Plug-in connection on motor side
- **Protection class:** II
- **Conformity with standard(s):** CE; EN 60335-1
- **Approvals:** VDE, GOST (are available); UL, CSA (are applied for)
- **Speed:** Using the programming unit 2 speeds between $n_{\min}$ and $n_{\max}$ can be programmed



Connection lead (total length 450 mm) is fitted ex works and can be detached.

Max. 1065 m³/h

EC axial fans

Ø 200 mm



- **Material:** Housing: Die-cast aluminum
Blades: PP plastic
Rotor: Thick-film passivated
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** Depending on installation and position⁽²⁾
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensate discharges:** None, open rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Frequency	Nominal speed	Max. power consumption ⁽¹⁾	Max. input current ⁽¹⁾	Max. back-pressure	Admissible amb. temp.	Weight	Technical features and connection diagram
Type	Motor	VAC	Hz	rpm ⁻¹	W	A	Pa	°C	kg		
W3G200-HD01 -01	M3G 055-BD	Ⓐ 1 ~ 200-240	50/60	2 900	54	0,55	96	-25..+60	1,6	P. 260 / H3)	
W3G200-HD01 -03	M3G 055-BD	Ⓑ 1 ~ 200-240	50/60	2 900	54	0,55	96	-25..+60	1,6	P. 261 / H4)	
W3G200-HD23 -10	M3G 055-BD	Ⓒ 1 ~ 115	50/60	2 900	65	1,00	94	-25..+60	1,6	P. 261 / H4)	

Subject to change

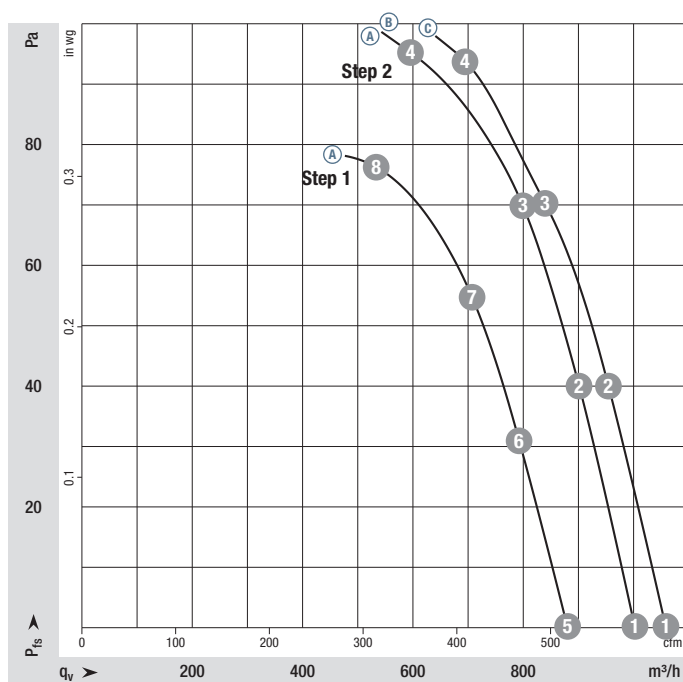
⁽¹⁾ Nominal data in operating point with maximum load and 230 VAC

⁽²⁾ Not suitable for permanent outdoor use. Special version available on request.

Curves:

Ⓐ 2 Speed stages

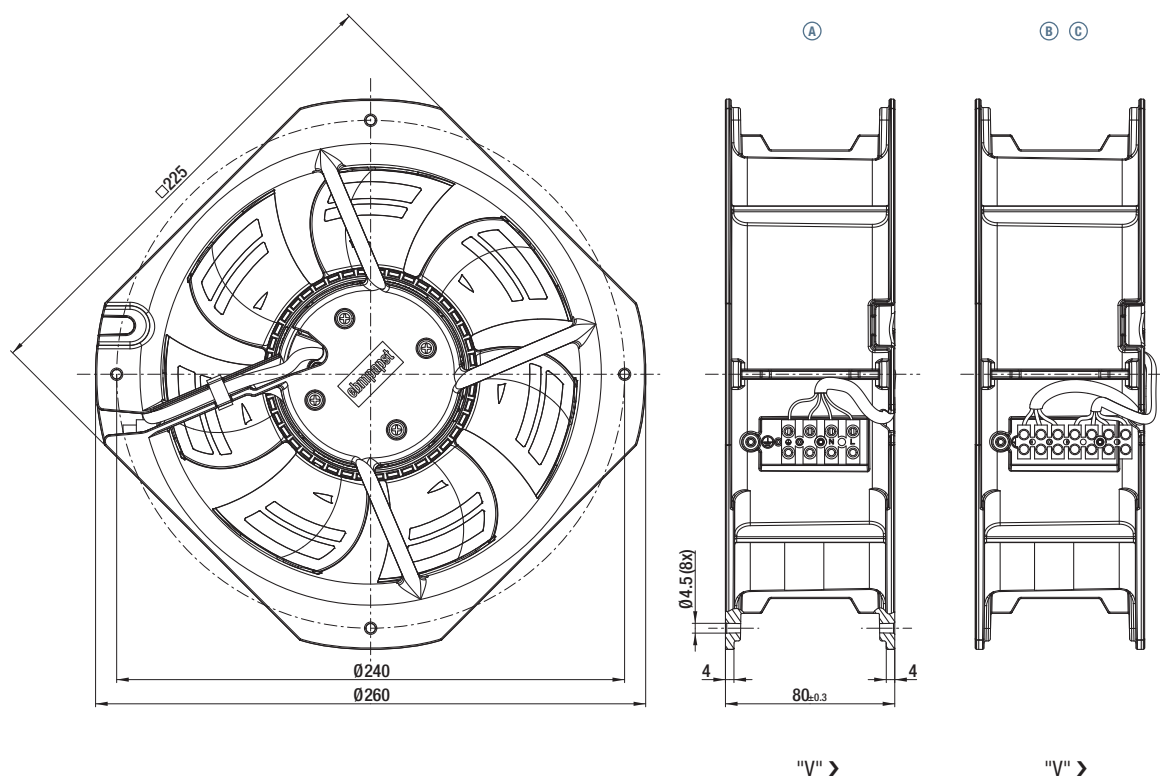
Ⓑ Ⓒ Speed-controlled



	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
Ⓐ ①	2970	50	0,49	65
Ⓐ ②	2890	54	0,53	64
Ⓐ ③	2830	58	0,56	65
Ⓐ ④	2900	54	0,55	70
Ⓐ ⑤	2645	36	0,37	62
Ⓐ ⑥	2575	39	0,40	61
Ⓐ ⑦	2530	42	0,42	62
Ⓐ ⑧	2500	43	0,43	67
Ⓑ ①	2970	50	0,49	65
Ⓑ ②	2890	54	0,53	64
Ⓑ ③	2830	58	0,56	65
Ⓑ ④	2900	54	0,55	70
Ⓒ ①	3150	62	1,00	66
Ⓒ ②	3050	65	1,00	66
Ⓒ ③	2930	65	1,00	72
Ⓒ ④	2900	65	1,00	74

Air performance measured according to: ISO 5801, Installation category A, without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Technical features:** See connection diagram p. 260/261
- **Touch current:** ≤ 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Electrical hookup:** Via terminal strip
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:** VDE, cURus



Max. 1910 m³/h

EC axial fans

Ø 250 mm



- **Material:** Housing: Die-cast aluminum
Blades: PP plastic
Rotor: Thick-film passivated
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** Depending on installation and position⁽²⁾
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensate discharges:** None, open rotor
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

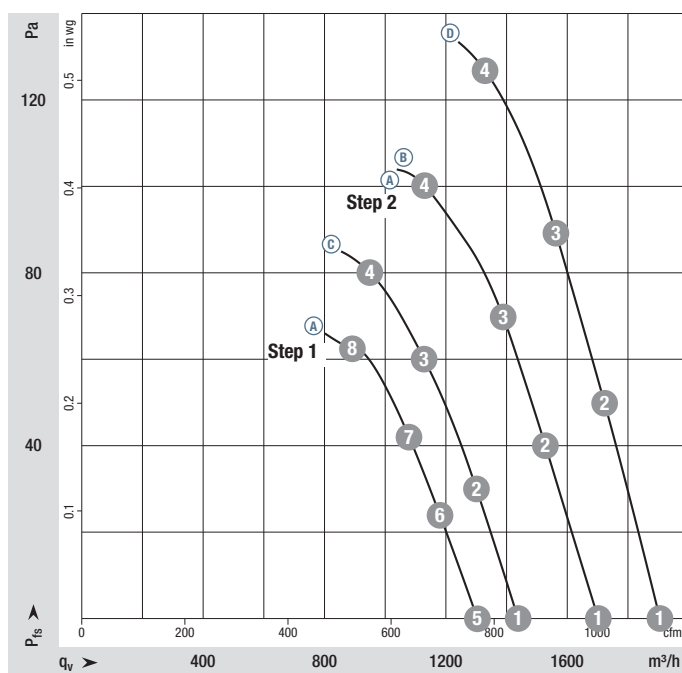
Nominal data		Curve	Nominal voltage	Frequency	Nominal speed	Max. power consumption ⁽¹⁾	Max. input current ⁽¹⁾	Max. back-pressure	Admissible amb. temp.	Weight	Technical features and connection diagram
Type	Motor	VAC	Hz	rpm ⁻¹	W	A	Pa	°C	kg		
W3G250-HH07 -01	M3G 055-CF	Ⓐ 1 ~ 200-240	50/60	2 330	83	0,72	100	-25...+60	2,1		P. 260 / H3)
W3G250-HH07 -03	M3G 055-CF	Ⓑ 1 ~ 200-240	50/60	2 330	83	0,72	100	-25...+60	2,1		P. 261 / H4)
W3G250-HH53 -03	M3G 055-CF	Ⓒ 1 ~ 115	50/60	2 040	56	0,90	80	-25...+50	2,1		P. 261 / H4)
W3G250-HK35 -11	M3G 055-CF	Ⓓ 1 ~ 115	50/60	2 700	125	1,90	130	-25...+60	2,1		P. 261 / H4)

Subject to change ⁽¹⁾ Nominal data in operating point with maximum load and 230 VAC ⁽²⁾ Not suitable for permanent outdoor use. Special version available on request.

Curves:

Ⓐ 2 Speed stages

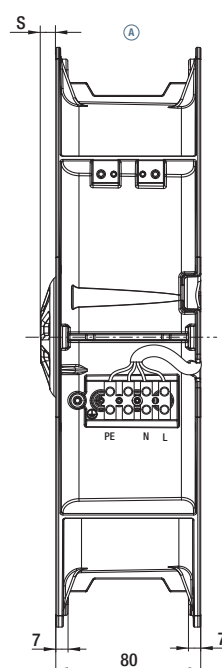
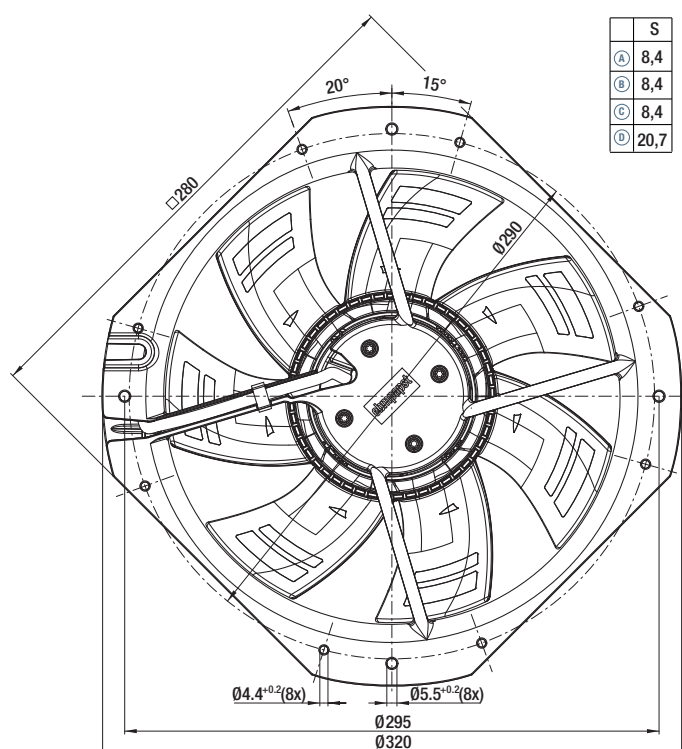
Ⓑ Ⓒ Ⓓ Speed-controlled



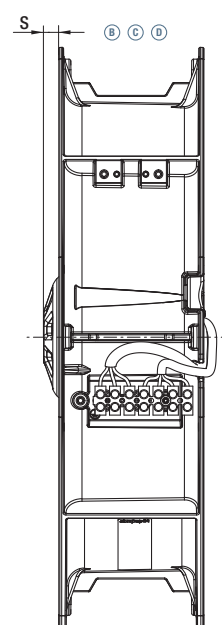
Air performance measured according to: ISO 5801, Installation category A, without contact protection. Suction-side noise levels: L_{wA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

	n rpm ⁻¹	P _{ed} W	I A	L _{wA} dB(A)
Ⓐ ①	2465	67	0,59	69
Ⓐ ②	2410	75	0,65	69
Ⓐ ③	2375	80	0,68	68
Ⓐ ④	2330	83	0,72	69
Ⓐ ⑤	1900	33	0,33	63
Ⓐ ⑥	1880	37	0,37	63
Ⓐ ⑦	1860	40	0,38	62
Ⓐ ⑧	1850	42	0,40	63
Ⓑ ①	2465	67	0,59	69
Ⓑ ②	2410	75	0,65	69
Ⓑ ③	2375	80	0,68	68
Ⓑ ④	2330	83	0,72	69
Ⓒ ①	2140	43	0,72	63
Ⓒ ②	2100	49	0,80	63
Ⓒ ③	2070	53	0,86	64
Ⓒ ④	2040	56	0,90	65
Ⓓ ①	2820	93	1,43	70
Ⓓ ②	2760	106	1,61	71
Ⓓ ③	2725	114	1,72	71
Ⓓ ④	2700	125	1,90	71

- **Technical features:** See connection diagram p. 260/261
- **Touch current:** ≤ 3.5 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Electrical hookup:** Via terminal strip
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:** VDE, cURus



"V" >



"V" >

Max. 135 m³/h

ACmaxx in-line duct fan

Ø 98.5 x 130 mm



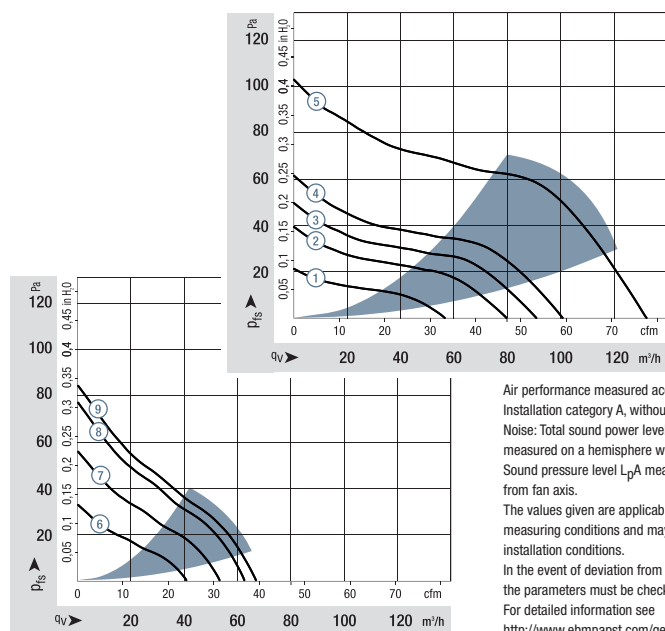
- Material:** Housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
- Direction of air flow:** Intake over struts
- Direction of rotation:** Clockwise, looking towards rotor
- Connection:** Via 3-pin Europa terminal strip max. 1.5 mm²
- Highlights:** Universally usable for all main voltages between 85 and 265 VAC, 50-60 Hz, Boost function
Vibration-isolated motor
Optional: new impeller for high pressure. Two speeds over jumper adjustable
- Weight:** 400 g
- Possible special versions:** (See chapter DC fans - specials)
 - Speed signal
 - PWM control input
 - Analog control input 0...10 VDC
 - Moisture protection
 - Degree of protection: IP 44 (IP45 possible depending on installation position)

1) Fiberglass-reinforced plastic

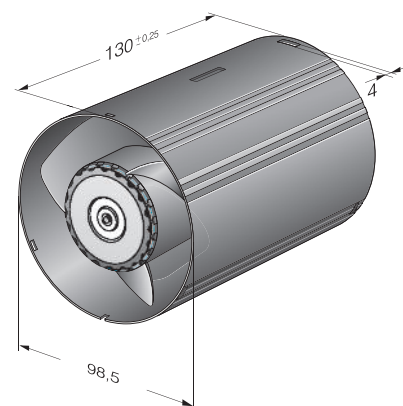
Series AC 100																
Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst standard	Service life L ₁₀ (T _{max}) ebm-papst standard	Life expectancy L ₁₀ PC (40 °C) see page 17	Curve
Type high air flow		m³/h	cfm	VAC	Hz	VAC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
Nominal boost	AC 100 MR	55	32	115/230	50-60	85...265	33	4.5	■	1.8	2 050	-10...+55	70 000 / 50 000	117 500		①
		90	53				40	5.0		3.8	3 150					③
Nominal Boost	AC 100 NR	80	47	115/230	50-60	85...265	35	4.7	■	2.5	2 750	-10...+55	70 000 / 50 000	117 500		②
		105	62				42	5.3		4.5	3 500					④
Max.	AC 100 HR*	135	79	115/230	50-60	85...265	tbd	tbd	■	7.0	4 500	-10...+55	tbd		tbd	⑤
Type high pressure		m³/h	cfm	VAC	Hz	VAC	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours		
Nominal Boost	AC 100 MR*	40	23	115/230	50-60	85...265	31	4.2	■	tbd	2 050*	-10...+55	70 000 / 50 000	117 500		⑥
		62	36				38	4.7		tbd	3 150*					⑧
Nominal Boost	AC 100 NR-017	53	31	115/230	50-60	85...265	33	4.4	■	2.8	2 680	-10...+55	70 000 / 50 000	117 500		⑦
		66	39				40	5.0		3.5	3 300					⑧

Subject to change

* on request

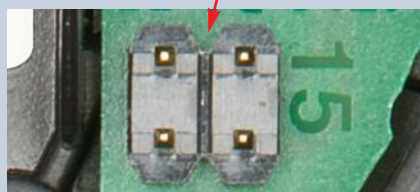
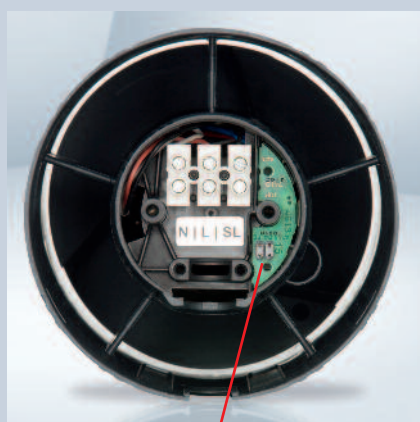


Impeller	Type	Boost off, Jumper low	Boost off, Jumper high	Boost on
High air flow	AC 100 MR	1 250	2 050	3 150
High air flow	AC 100 NR	2 200*	2 750	3 500
High pressure	AC 100 MR*	1 250*	2 050*	3 150*
High pressure	AC 100 NR-017	2 180	2 680	3 300



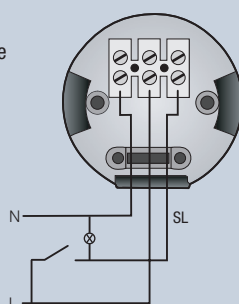
Highest energy efficiency: 0.03 - 0.045 W/m³/h free air (specific fan power).
Boost speed: 2 speed settings possible via boost function.
Vibration isolation: Reduced transmission of vibrations from motor to housing.
Intelligence: Can be expanded to include set value requirement and signal outputs as an option.

Examples of connections

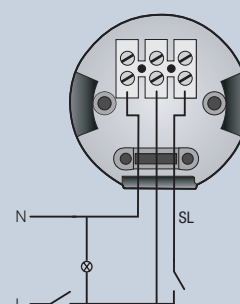


Jumper Low Jumper High

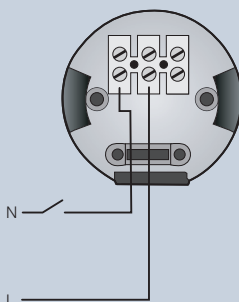
Example 1:
 Nom speed endurance
 Boost via light switch



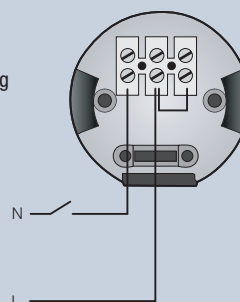
Example 2:
 Nom speed via
 light switch
 Separate boost switch



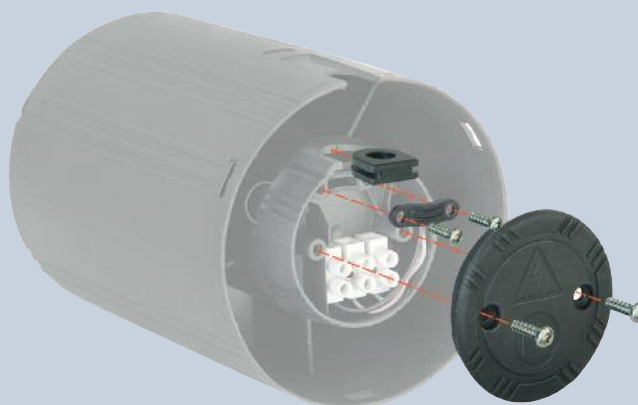
Example 3:
 Simple connection
 Nom speed without
 switching



Example 4:
 Simple connection
 Boost without switching



Scope of delivery





AC axial fans



AC axial fan overview
AC axial fans

205
206

AC axial fans

Technical information



Product line

The renowned ebm-papst AC fans are used when DC voltage is not available. The AC range of fans is based on experience gained from decades of development know-how, millions of units in series production, and the innovation competence of a world-wide technology pioneer.

In this catalog, we offer you the broad spectrum of our AC fans. In addition to complete systems, you will also find fans without external housing.

They offer economic benefits whenever the air duct design can be integrated in the respective device.

Variety of sizes

AC fans are available in a variety of sizes with either air exhaust or air intake over struts. Silent running models with sleeve bearings. Electrical connection with plug connection or external exposed connection wires are available.

Shaded-pole or capacitor motors

Fan drives by shaded-pole or capacitor motors, most of which incorporate the world-famous ebm-papst external rotor principle. The fan blades are directly attached to the external rotor of the external rotor motor. This construction combining high performance with profitability.

Flat built AC fans

ebm-papst also has AC fans with a particularly flat construction and an internal rotor motor. Their advantage: quick start to full speed. A plastic impeller and the smaller and lighter internal rotor motor result in lower rotational inertia.

Bearings

AC fans with sleeve bearings are powered by Class E insulated motors. Fans with ball bearings are equipped with Class B, E, or F insulated motors.

Degree of protection

All ebm-papst fans conform to the requirements of IP 20. IP 54 / IP 65 and special degrees of protection are available on request.

AC voltage

The line of AC fans for Euro voltage according to IEC 60038 (230 V $\pm$ 10 %) is also available in 115 V.

Frequencies

AC fans can be operated at frequencies of 50 or 60 Hz. In this case, their technical data changes accordingly.

Capacitor

Fans driven by capacitor external motors provide particularly high operating efficiency. Generally, the required motor run capacitor is already integrated in the fan housing.

Overloading

Almost all AC fans are protected against overloading (e. g. due to locked rotor) – either impedance protected (marked "Impedance protected" or "Z. P.") or equipped with a thermal switch (marked "Thermally protected" or "Th. P."). The model designation of these fans ends with "S".

Axial fans for AC operation

Overview of air performance

Dimensions	Series	Air flow	Page
mm		m³/h	
□ 80 x 38	8000 N	30...61	206
∅ 76 x 37	8000 TV	24...47	207
□ 92 x 25	3900	31...70	208
□ 92 x 38	3000	49...89	209
□ 119 x 25	9900	84...135	210
□ 119 x 38	4000 N	80...180	211
□ 119 x 38	4000 Z	100...180	212
∅ 108 x 37	4600 TZ	125...140	213
□ 127 x 38	5900	150...206	214
□ 135 x 38	5600	235...270	215
150 x 172 x 38	7000	320...380	216
∅ 150 x 55	7800	325...380	217
∅ 150 x 55	7400	380...425	218
∅ 172 x 51	6000	375...500	219
□ 225 x 80	W2E 200	880...1030	220
□ 280 x 80	W2E 250	1865	222
∅ 200	K2E 200	765...830	224
∅ 200	K2E 200	765...845	226
∅ 200	K2D 200	780...880	228

Subject to change

Overview of technically feasible designs

Dimensions	VDE, UL, CSA	SMTEC sleeve bearings/ Ball bearings	Speed signal	Moisture protection IP >= 54	IP 65	Salt spray protection	Page
Axial fans							
mm	Series	OPTIONAL	P.				
□ 80 x 38	8000 N	yes □ / ■	–	• • • •	• • • •	• • • •	206
∅ 76 x 37	8000 TV	yes □ / ■	–	• • • •	• • • •	• • • •	207
□ 92 x 25	3900	yes □ / ■	–	• • • •	• • • •	• • • •	208
□ 92 x 38	3000	yes □ / ■	–	• • • •	• • • •	• • • •	209
□ 119 x 25	9900	yes □ / ■	–	• • • •	• • • •	• • • •	210
□ 119 x 38	4000 N	yes □ / ■	•	• • • •	• • • •	• • • •	211
□ 119 x 38	4000 Z	yes □ / ■	•	• • • •	• • • •	• • • •	212
∅ 108 x 37	4600 TZ	yes □ / ■	–	• • • •	• • • •	• • • •	213
□ 127 x 38	5900	yes □ / ■	–	• • • •	• • • •	• • • •	214
□ 135 x 38	5600	yes ■	–	• • • •	• • • •	• • • •	215
150 x 172 x 38	7000	yes ■	–	• • • •	• • • •	• • • •	216
∅ 150 x 55	7800	yes ■	•	• • • •	• • • •	• • • •	217
∅ 150 x 55	7400	yes ■	–	• • • •	• • • •	• • • •	218
∅ 172 x 51	6000	yes ■	–	• • • •	• • • •	• • • •	219

Subject to change

• available – not yet available □ Sleeve bearings ■ Ball bearings

Max. 61 m³/h

AC axial fans

□ 80 x 38 mm



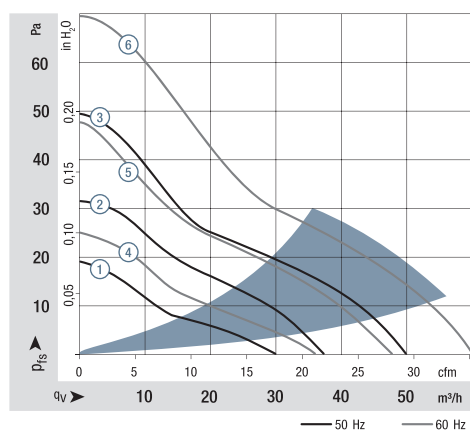
- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via 2 single wires
grounding lug for M4 x 8
- **Weight:** 490 g
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages,
this series achieves greater energy efficiency.
See page 188.
- **Possible special versions:**
(See page 12)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 65

Series 8000 N

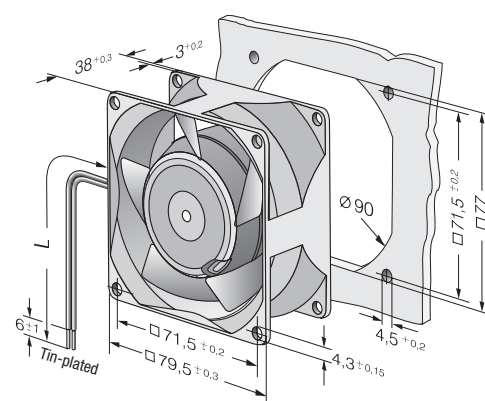
Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m³/h	cfm	VAC	Hz	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
8880 N	30	17.7	230	50	18	3.3	□	9.0	1 750	-10...+80	60 000 / 25 000		①
8850 N	37	21.8	230	50	24	3.9	□	12.5	2 150	-10...+70	52 500 / 25 000		②
8550 N	50	29.4	230	50	30	4.4	□	12.0	2 700	-10...+70	52 500 / 25 000		③
8556 N	50	29.4	230	50	31	4.5	■	12.0	2 800	-40...+90	52 500 / 15 000		③
8830 N	36	21.2	115	60	21	3.7	□	8.0	1 950	-10...+80	62 500 / 25 000		④
8800 N	47	27.7	115	60	28	4.3	□	11.0	2 500	-10...+70	55 000 / 27 500		⑤
8500 N	61	35.9	115	60	34	4.8	□	11.0	3 200	-10...+75	55 000 / 25 000		⑥
8506 N	61	35.9	115	60	35	5.0	■	11.0	3 300	-40...+95	55 000 / 15 000		⑥

Subject to change

Fan type					Length "L"	Connection wires
8880 N	8830 N	8800 N	8550 N	8500 N	310 mm long	AWG 18, TR 64
8556 N	8506 N				310 mm long	AWG 22
8850 N					440 mm long	AWG 18, TR 64



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 47 m³/h

AC axial fans

Ø 76 x 37 mm



- **Material:** Impeller: Die-cast aluminum
Mounting bracket: Metal
 - **Direction of air flow:** Exhaust over mounting bracket
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** Via 2 single wires
 - **Weight:** 370 g
- **Possible special versions:** (See page 12)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 65

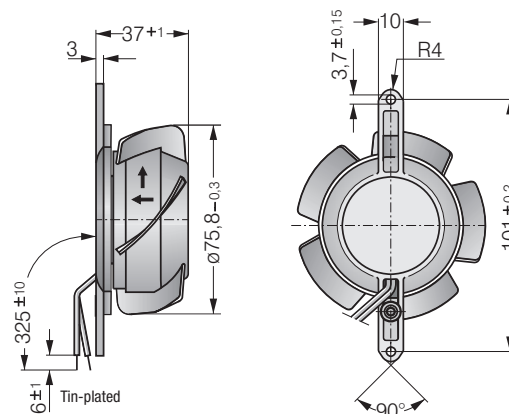
Series 8000 TV

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}
Type	m ³ /h	cfm	VAC	Hz	dB(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours
8880 TV	24	14.1	230	50	15	□	9.0	1 650	-10...+80	60 000 / 25 000	
8850 TV	31	18.2	230	50	20	□	12.0	2 100	-10...+70	52 500 / 25 000	
8550 TV	40	23.5	230	50	27	□	12.0	2 650	-10...+70	52 500 / 25 000	
8556 TV	40	23.5	230	50	28	■	12.0	2 750	-40...+90	52 500 / 15 000	
8830 TV	27	15.9	115	60	18	□	8.0	1 850	-10...+80	62 500 / 25 000	
8800 TV	36	21.2	115	60	24	□	11.0	2 450	-10...+70	55 000 / 27 500	
8500 TV	47	27.7	115	60	32	□	11.0	3 150	-10...+75	55 000 / 25 000	
8506 TV	47	27.7	115	60	33	■	11.0	3 250	-40...+95	55 000 / 15 000	

Subject to change

The air flow and sound level of fans without external housing depend on the installation conditions. The stated air flow and noise have been measured with an orifice 76.5 mm Ø at a distance of approx. 17 mm from the mounting bracket. The air flow capacity of fan series 8000 N is achievable because of the exceptionally favorable installation conditions. The noise in the optimal operating range can be measured for these fans only in a specific application.

Fan type				Length "L"	Connection wires
8880 TV	8850 TV	8830 TV	8800 TV	325 mm long	AWG 18, TR 64
8550 TV	8500 TV			325 mm long	AWG 18, TR 64
8556 TV	8506 TV			325 mm long	AWG 18



Max. 70 m³/h

AC axial fans

□ 92 x 25 mm

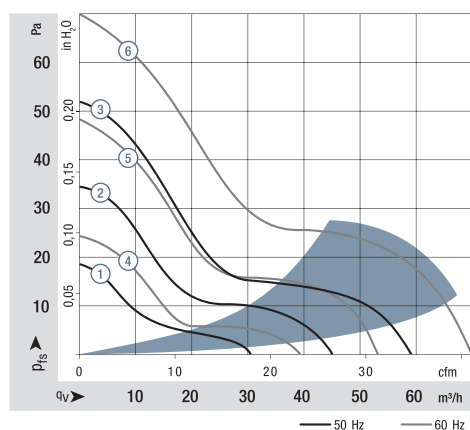


- **Material:** Housing: Die-cast aluminum
Impeller: Mineral-reinforced PA plastic
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4
- **Weight:** 280 g
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
See page 189.
- **Possible special versions:** (See page 12)
- Moisture protection

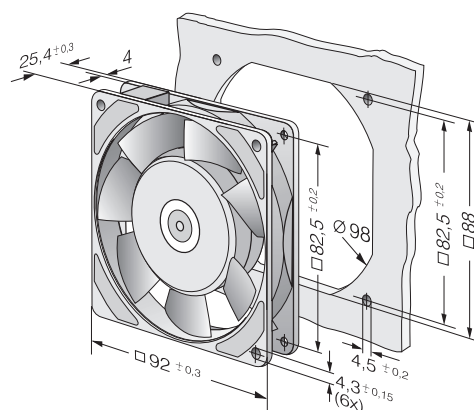
Series 3900

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m³/h	cfm	VAC	Hz	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
3950 L	31	18.2	230	50	24	3.8	□	6.0	1 550	-10...+80	70 000 / 27 500		①
3956 L	31	18.2	230	50	24	3.8	■	6.0	1 550	-40...+80	70 000 / 27 500		①
3950 M	45	26.5	230	50	29	4.2	□	6.0	2 150	-10...+80	70 000 / 27 500		②
3956 M	45	26.5	230	50	29	4.2	■	6.0	2 150	-40...+80	70 000 / 27 500		②
3950	59	34.7	230	50	35	4.7	□	11.0	2 650	-20...+80	55 000 / 20 000		③
3956	59	34.7	230	50	35	4.7	■	11.0	2 650	-40...+80	55 000 / 20 000		③
3900 L	39	23.0	115	60	27	4.0	□	5.0	1 850	-10...+80	70 000 / 27 500		④
3906 L	39	23.0	115	60	27	4.0	■	5.0	1 850	-40...+80	70 000 / 27 500		④
3900 M	53	31.2	115	60	34	4.6	□	5.0	2 600	-10...+80	70 000 / 27 500		⑤
3906 M	53	31.2	115	60	34	4.6	■	5.0	2 600	-40...+80	70 000 / 27 500		⑤
3900	70	41.2	115	60	40	5.1	□	9.0	3 150	-20...+80	60 000 / 22 500		⑥
3906	70	41.2	115	60	40	5.1	■	9.0	3 150	-40...+80	60 000 / 22 500		⑥

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{pA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 89 m³/h

AC axial fans

□ 92 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



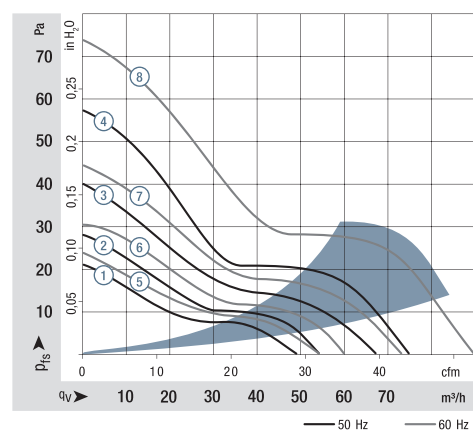
- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via 2 single wires
grounding lug for M4 x 8
- **Weight:** 420 g
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 189.
- **Possible special versions:** (See page 12)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 65

Series 3000

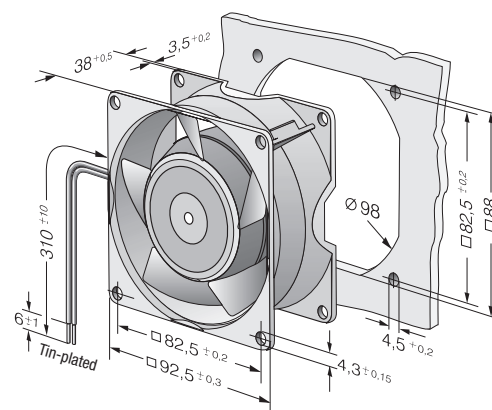
Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m³/h	cfm	VAC	Hz	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
3850	49	28.8	230	50	24	3.7	□	9.0	1 750	-10...+75	60 000 / 27 500		①
3856	54	31.8	230	50	26	3.9	■	9.0	1 950	-40...+90	60 000 / 20 000		②
3550	67	39.4	230	50	32	4.4	□	8.5	2 300	-10...+80	60 000 / 25 000		③
3556	67	39.4	230	50	33	4.5	■	8.5	2 400	-40...+90	60 000 / 20 000		③
3650	75	44.1	230	50	36	4.8	□	12.0	2 650	-10...+55	52 500 / 37 500		④
3656	75	44.1	230	50	37	4.9	■	12.0	2 700	-40...+75	52 500 / 22 500		④
3800	54	31.8	115	60	26	3.9	□	8.0	1 900	-10...+80	62 500 / 25 000		⑤
3806	60	35.3	115	60	29	4.2	■	8.0	2 150	-40...+95	62 500 / 17 500		⑥
3500	73	43.0	115	60	35	4.6	□	8.0	2 500	-10...+80	62 500 / 25 000		⑦
3506	73	43.0	115	60	36	4.7	■	8.0	2 600	-40...+95	62 500 / 17 500		⑦
3600	89	52.4	115	60	41	5.1	□	11.0	3 100	-10...+65	55 000 / 30 000		⑧
3606	89	52.4	115	60	42	5.2	■	11.0	3 200	-40...+75	55 000 / 25 000		⑧

Subject to change

Fan type	Length "L"	Connection wires
With sleeve bearings	310 mm long	AWG 18, TR 64
With ball bearings	310 mm long	AWG 18



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general-conditions>



Max. 135 m³/h

AC axial fans

□ 119 x 25 mm

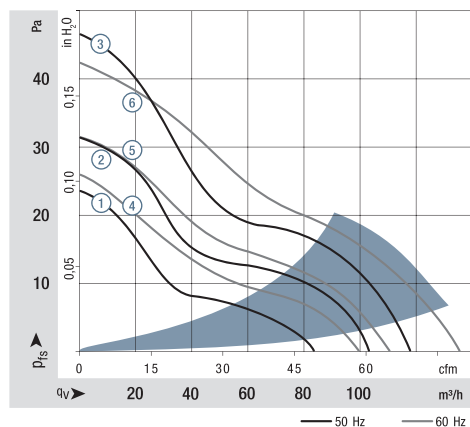


- **Material:** Housing: Die-cast aluminum
Impeller: Mineral-reinforced PA plastic
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4
- **Weight:** 320 g
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
See page 192.
- **Possible special versions:** (See page 12)
- Moisture protection

Series 9900

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
9956 L	84	49.4	230	50	29	4.4	■	9.5	1850	-40...+80	57 500 / 22 500		①
9956 M	104	61.2	230	50	35	4.7	■	10.0	2250	-40...+80	57 500 / 22 500		②
9950	117	68.9	230	50	37	5.0	■	14.0	2450	-20...+70	47 500 / 22 500		③
9956	117	68.9	230	50	37	5.0	■	14.0	2450	-40...+70	47 500 / 22 500		③
9906 L	100	58.9	115	60	34	4.6	■	8.0	2100	-40...+80	62 500 / 25 000		④
9906 M	111	65.3	115	60	37	5.0	■	8.0	2450	-40...+80	62 500 / 25 000		⑤
9900	135	79.5	115	60	42	5.4	■	12.0	2850	-20...+70	52 500 / 25 000		⑥
9906	135	79.5	115	60	42	5.4	■	12.0	2850	-40...+70	52 500 / 25 000		⑥

Subject to change



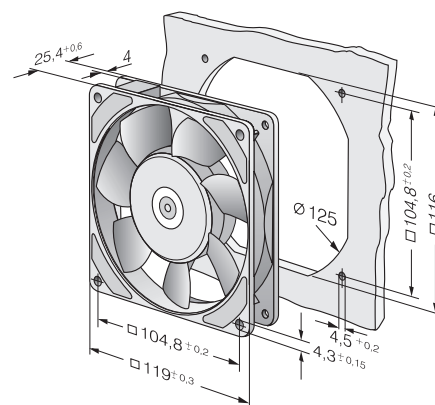
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general-conditions>



Max. 180 m³/h

AC axial fans

□ 119 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

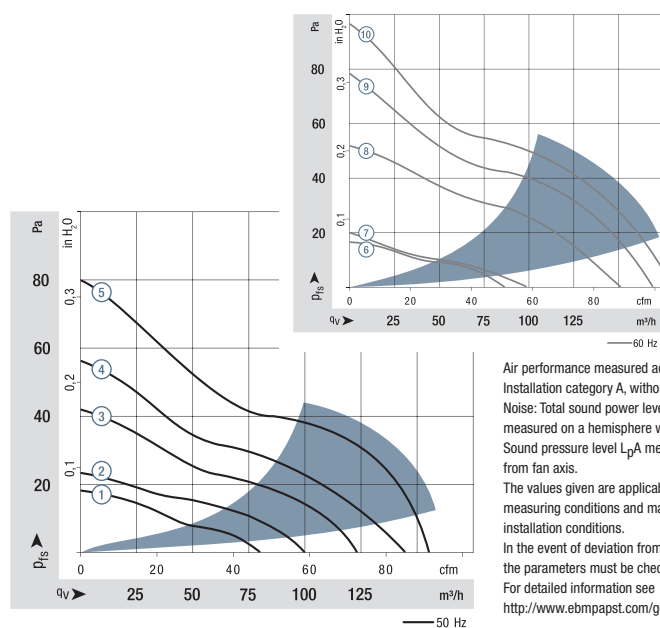


- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Intake over struts
Types 4890 N and 4840 N
Exhaust over struts
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm
grounding lug for M4
- **Weight:** 550 g
- **Note:** Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 192.
- **Available as an option:** Versions with reinforced mounting flanges and exposed external single wires.
- **Possible special versions:** (See page 12)
 - Speed signal
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 65

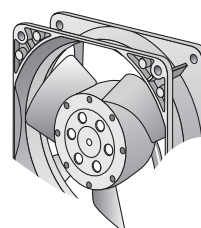
Series 4000 N

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
4890 N	80	47.0	230	50	25	4.0	■	11.0	1 550	-10...+70	55 000 / 27 500		①
4850 N*	100	58.8	230	50	32	4.4	■	10.0	1 800	-10...+70	57 500 / 27 500		②
4580 N*	123	72.3	230	50	41	5.2	■	18.0	2 350	-10...+55	40 000 / 27 500		③
4550 N*	145	85.2	230	50	44	5.4	■	16.5	2 550	-10...+55	42 500 / 30 000		④
4650 N	160	94.1	230	50	46	5.4	■	19.0	2 650	-10...+55	37 500 / 27 500		⑤
4656 N	160	94.1	230	50	47	5.5	■	19.0	2 650	-40...+85	37 500 / 15 000		⑤
4840 N	85	50.0	115	60	26	4.1	■	10.0	1 650	-10...+75	57 500 / 25 000		⑥
4800 N*	97	57.0	115	60	32	4.3	■	9.0	1 750	-10...+75	60 000 / 27 500		⑦
4530 N*	151	88.8	115	60	45	5.4	■	16.0	2 700	-10...+65	42 500 / 25 000		⑧
4500 N*	169	100	115	60	48	5.7	■	15.0	3 000	-10...+65	47 500 / 25 000		⑨
4600 N	180	106	115	60	50	5.7	■	18.0	3 100	-10...+60	40 000 / 25 000		⑩
4606 N	180	106	115	60	51	5.8	■	18.0	3 100	-40...+90	40 000 / 15 000		⑩

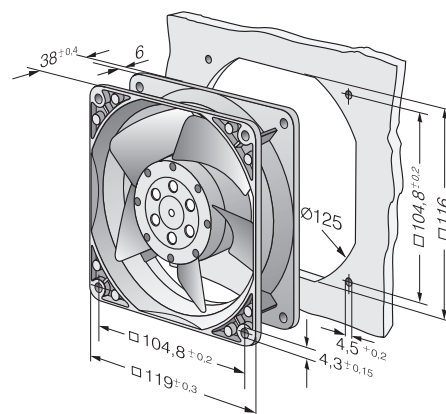
Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configuration,
the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general-conditions>



* Fan with 3 blades.



Max. 180 m³/h

AC axial fans

□ 119 x 38 mm

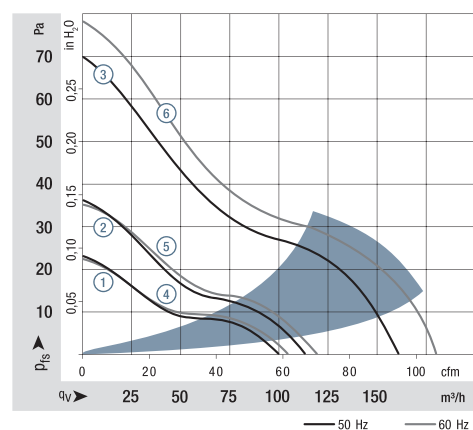


- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm
grounding lug for M4 x 8
- **Weight:** 540 g
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
See page 192.
- **Possible special versions:** (See page 12)
 - Speed signal
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 65

Series 4000 Z

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
4850 Z	100	58.8	230	50	26	4.0	□	13.0	1 700	-10...+65	50 000 / 27 500		①
4856 Z	100	58.8	230	50	26	4.0	■	13.0	1 700	-40...+75	50 000 / 20 000		①
4580 Z	115	67.6	230	50	30	4.3	□	13.0	1 900	-10...+65	50 000 / 27 500		②
4586 Z	115	67.6	230	50	30	4.3	■	13.0	1 900	-40...+75	50 000 / 20 000		②
4650 Z	160	94.1	230	50	40	5.3	□	19.0	2 650	-10...+50	37 500 / 30 000		③
4656 Z	160	94.1	230	50	40	5.3	■	19.0	2 650	-40...+75	37 500 / 17 500		③
4800 Z	105	61.7	115	60	28	4.1	□	12.0	1 800	-10...+70	52 500 / 25 000		④
4806 Z	105	61.7	115	60	28	4.1	■	12.0	1 800	-40...+75	52 500 / 17 500		④
4530 Z	120	70.5	115	60	32	4.4	□	12.0	2 000	-10...+70	52 500 / 25 000		⑤
4536 Z	120	70.5	115	60	32	4.4	■	12.0	2 000	-40...+75	52 500 / 17 500		⑤
4600 Z	180	106	115	60	45	5.6	□	18.0	3 100	-10...+60	40 000 / 25 000		⑥
4606 Z	180	106	115	60	45	5.6	■	18.0	3 100	-40...+85	40 000 / 15 000		⑥

Subject to change



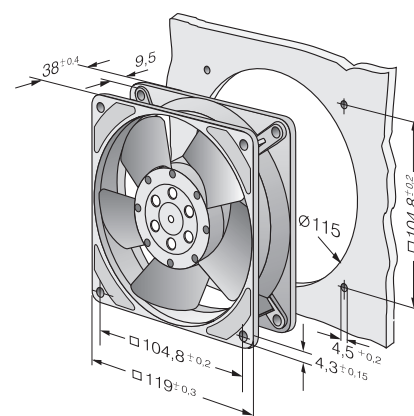
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.

The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.

In the event of deviation from the standard configuration,
the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general conditions>



Max. 140 m³/h

AC axial fans

Ø 108 x 37 mm



- **Material:** Impeller: Die-cast aluminum
Mounting bracket: Metal
 - **Direction of air flow:** Exhaust over mounting bracket
 - **Direction of rotation:** Clockwise, looking towards rotor
 - **Connection:** Via 2 single wires
 - **Weight:** 430 g
- **Possible special versions:** (See page 12)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54 / IP 65

Series 4600 TZ

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}
Type	m ³ /h	cfm	VAC	Hz	dB(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours
4650 TZ	125	73.6	230	50	42	□	19.0	2 600	-10...+50	37 500 / 30 000	
4656 TZ	125	73.6	230	50	42	■	19.0	2 600	-40...+65	37 500 / 20 000	
4600 TZ	140	82.4	115	60	45	□	18.0	2 950	-10...+50	40 000 / 32 500	
4606 TZ	140	82.4	115	60	45	■	18.0	2 950	-40...+75	40 000 / 17 500	

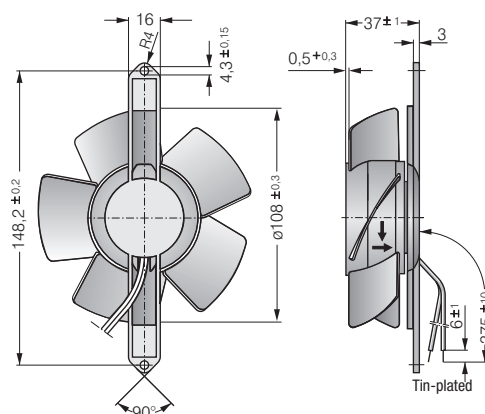
Subject to change

The air flow and sound level of fans without external housing depends on the installation conditions.

The stated air flow and noise have been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket.

The air flow capacity of fan series 4000 Z is achievable because of the exceptionally favorable installation conditions. The noise in the optimal operating range can be measured for these fans only in a specific application.

Fan type	Connection wires
4650 TZ	AWG 22, TR 32
4656 TZ	AWG 18



Max. 206 m³/h

AC axial fans

□ 127 x 38 mm



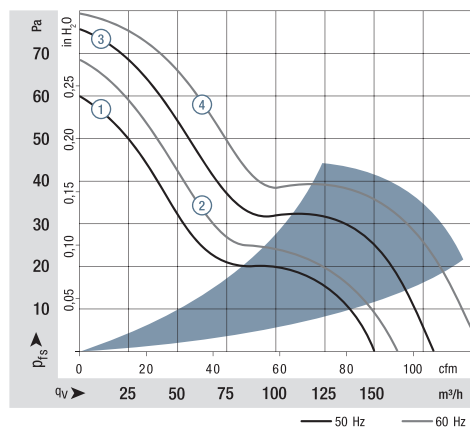
- **Material:** Housing: Die-cast aluminum
Impeller: GRP¹⁾ (PA)
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.8 mm
grounding lug for M4 x 6
- **Weight:** 570 g
- **Possible special versions:**
(See page 12)
- Moisture protection

1) Fiberglass-reinforced plastic

Series 5900

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
5988	150	88.2	230	50	37	4.9	■	13.0	2 250	-30...+55	35 000 / 20 000		①
5950	180	106	230	50	43	5.4	■	18.0	2 700	-20...+50	40 000 / 32 500		③
5958	180	106	230	50	44	5.5	■	18.0	2 750	-30...+60	40 000 / 25 000		③
5938	162	95.2	115	60	40	4.9	■	12.0	2 500	-30...+55	35 000 / 20 000		②
5900	206	121	115	60	46	5.7	■	17.0	3 050	-20...+55	42 500 / 30 000		④
5908	206	121	115	60	47	5.8	■	17.0	3 100	-30...+75	42 500 / 20 000		④

Subject to change



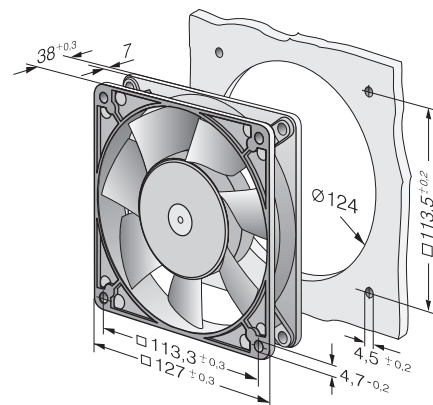
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.

In the event of deviation from the standard configuration, the parameters must be checked after installation!

For detailed information see

<http://www.ebmpapst.com/general-conditions>



Max. 270 m³/h

AC axial fans

□ 135 x 38 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

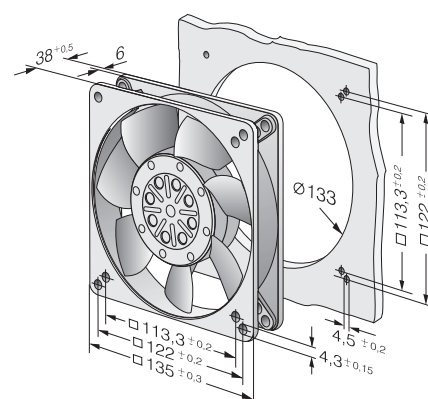
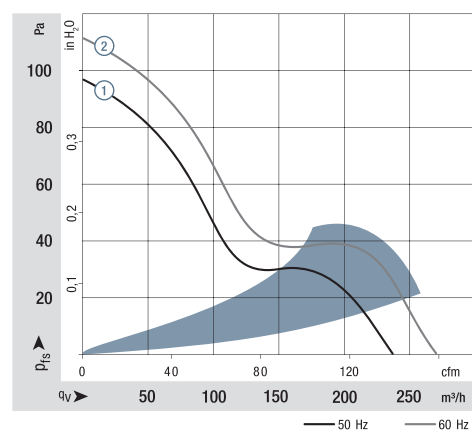


- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4 x 8
- **Weight:** 800 g
- **Possible special versions:** (See page 12)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

Series 5600

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
5656 S	235	138	230	50	46	5.9	■	30.0	2 700	-35...+70	45 000 / 20 000		①
5606 S	270	159	115	60	50	6.2	■	26.0	3 100	-35...+80	47 500 / 20 000		②

Subject to change



Max. 380 m³/h

AC axial fans

150 x 172 x 38 mm

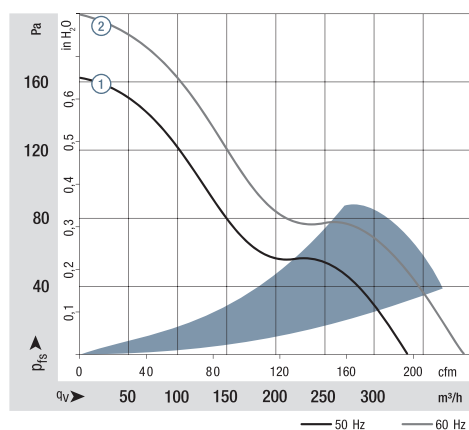


- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm
grounding lug for M4 x 8
- **Weight:** 900 g
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency.
See pages 194, 196, and 198.

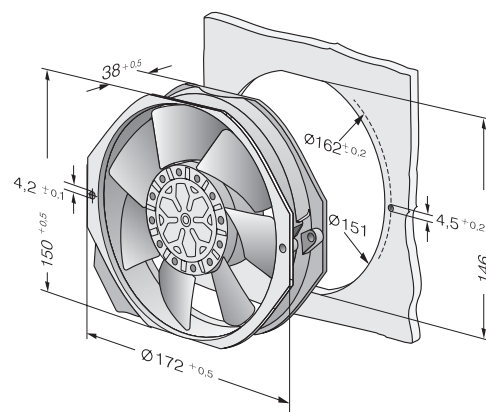
Series 7000

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
7056 ES	320	188	230	50	51	6.4	■	27.0	2 800	-25...+55	60 000 / 32 000		①
7006 ES	380	224	115	60	56	6.8	■	28.0	3 350	-25...+65	55 000 / 18 000		②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general-conditions>



Max. 380 m³/h

AC axial fans

Ø 150 x 55 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

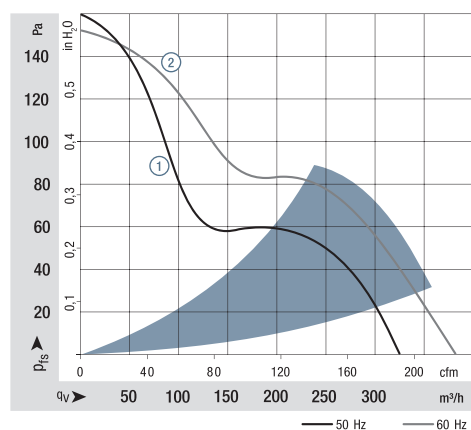


- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 single wires
wire ends with wire end splices
grounding lug for M4 x 8
- **Weight:** 1.1 kg
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See page 194.

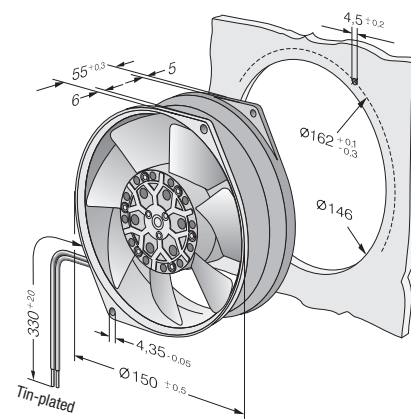
Series 7800

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
7855 ES	325	191	230	50	49	6.0	■	45.0	2 800	-25...+50	60 000 / 47 500		①
7856 ES	325	191	230	50	49	6.0	■	45.0	2 800	-25...+70	60 000 / 30 000		①
7805 ES	380	224	115	60	53	6.4	■	38.0	3 250	-25...+70	60 000 / 47 500		②
7806 ES	380	224	115	60	53	6.4	■	38.0	3 250	-25...+90	60 000 / 15 000		②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general-conditions>



Max. 425 m³/h

AC axial fans

Ø 150 x 55 mm

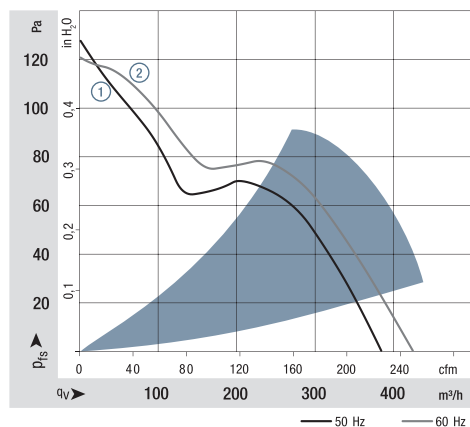


- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Intake over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 single wires
wire ends with wire end splices
grounding lug for M4 x 8
- **Weight:** 1.1 kg
- **Note:** Please note our new ACmaxx series.
With identical mounting dimensions and voltages,
this series achieves greater energy efficiency.
See page 194.

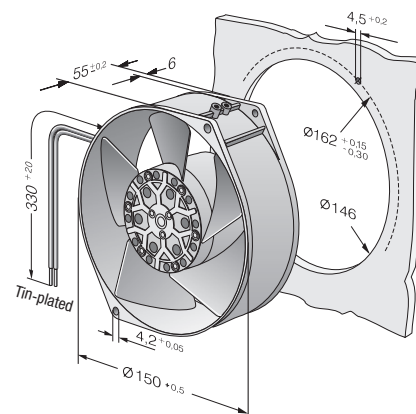
Series 7400

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
7450 ES	380	224	230	50	60	6.8	■	47.0	2 700	-25...+50	63 000 / 50 000		①
7400 ES	425	250	115	60	62	6.9	■	46.0	3 050	-25...+70	50 000 / 24 000		②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002
measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance
from fan axis.
The values given are applicable only under the specified
measuring conditions and may differ depending on the
installation conditions.
In the event of deviation from the standard configura-
tion, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 500 m³/h

AC axial fans

Ø 172 x 51 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

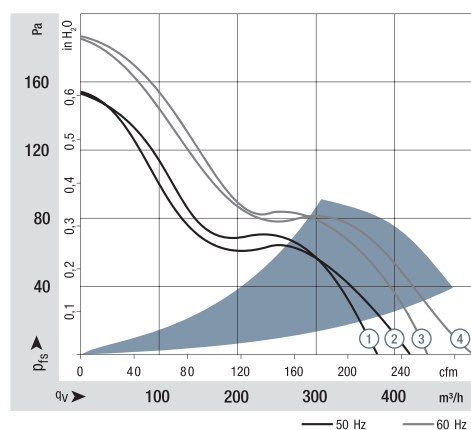


- **Material:** Housing: Die-cast aluminum
Impeller: painted sheet steel
- **Direction of air flow:** Exhaust over struts
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** Via 2 flat plugs 2.8 x 0.5 mm grounding lug for M4 x 6
- **Weight:** 1.0 kg
- **Note:** Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves greater energy efficiency. See pages 196 and 198.

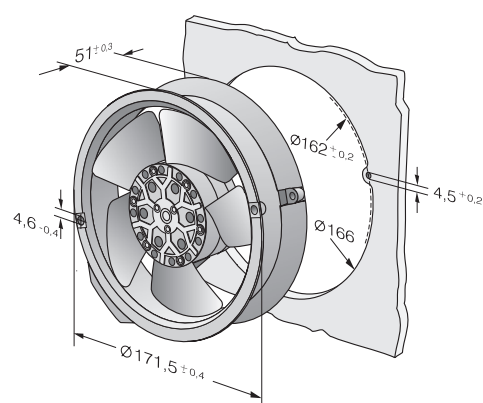
Series 6000

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	dB(A)	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
6058 ES	375	221	230	50	55	5.9	■	24.0	2 800	-25...+70	62 000 / 31 000		①
6078 ES	420	247	230	50	54	6.3	■	26.0	2 800	-25...+60	62 000 / 39 000		②
6008 ES	440	259	115	60	60	6.4	■	26.0	3 300	-25...+70	57 000 / 28 000		③
6028 ES	500	284	115	60	58	6.7	■	29.0	3 300	-25...+75	57 000 / 22 000		④

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 1000 m³/h

AC axial fans

□ 225 x 80 mm

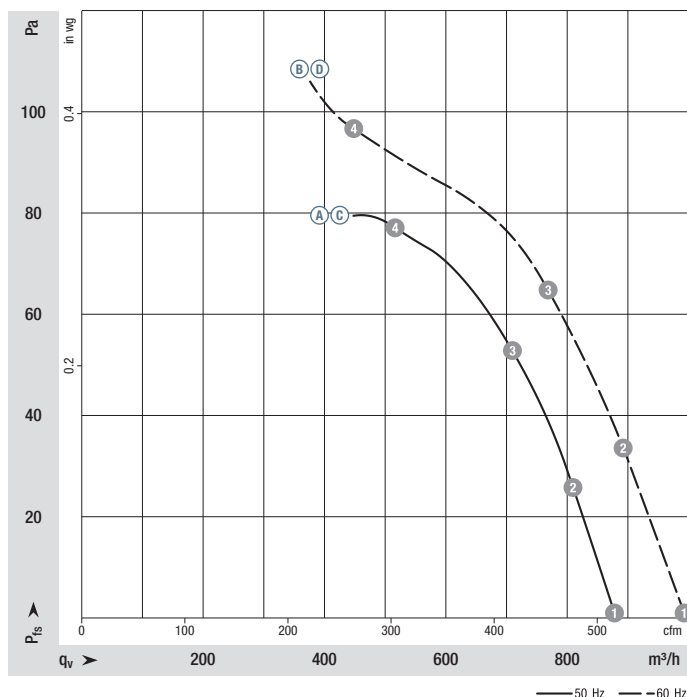


- **Material:** Housing: Die-cast-aluminum
Impeller: Sheet steel, painted black
Rotor: Painted black
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "B"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Frequency	Air flow	Nominal speed	Power consumption	Input current	Capacitor	Sound power level	Max. back-pressure	Admissible amb. temp.	Weight	Connection diagram
Type	Motor		VAC	Hz	m³/h	rpm ⁻¹	W	A	F/VDB	dB(A)	Pa	°C	kg	
W2E 200-HK86-01	M2E 068-BF	A	1~115	50	880	2550	64	0.58	5.0/220	—	80	-25...+60	2.0	P. 263 / A1)
		B	1~115	60	1000	2800	80	0.70	5.0/220	—	95	-25...+65	2.0	
W2E 200-HK38-01	M2E 068-BF	C	1~230	50	880	2550	64	0.29	1.5/450	—	80	-25...+60	2.1	P. 263 / A1)
		D	1~230	60	1000	2800	80	0.35	1.5/450	—	95	-25...+65	2.1	

Subject to change

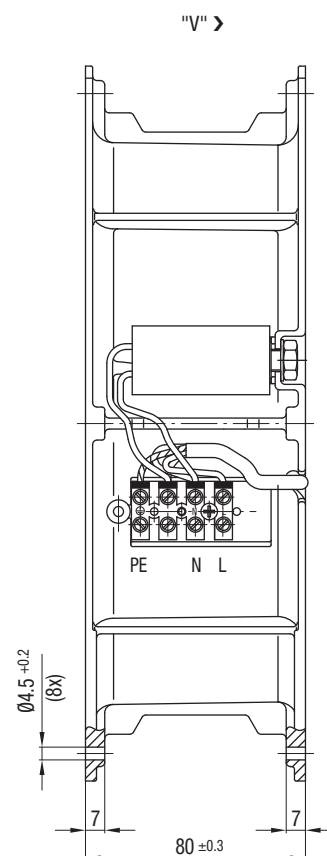
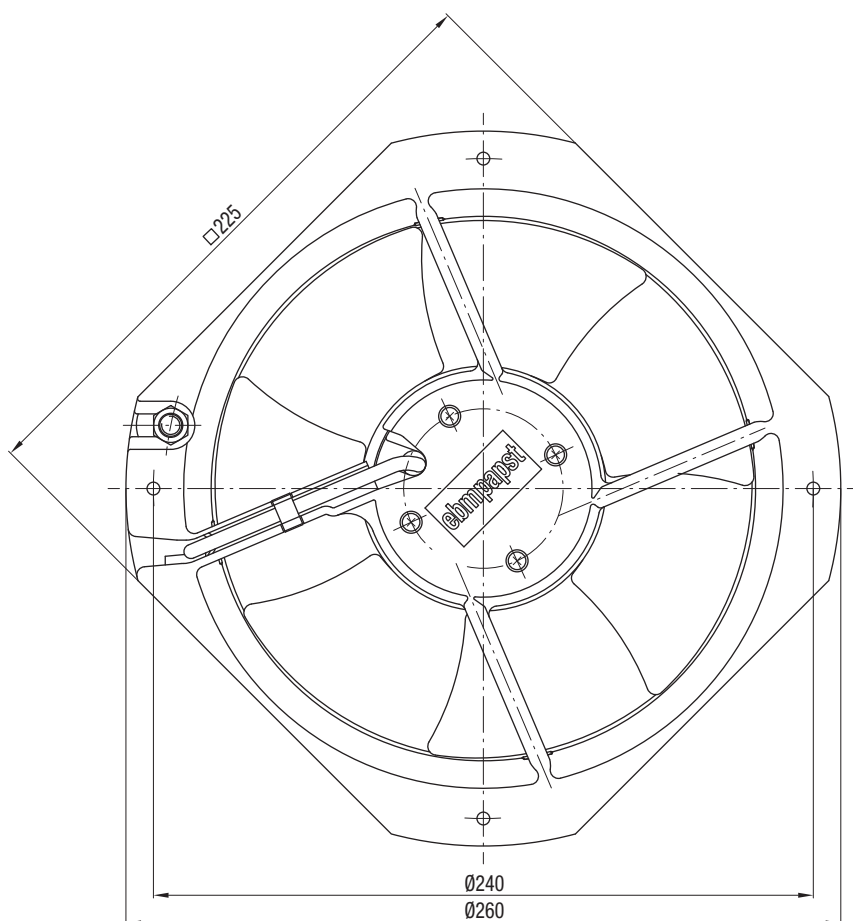
Curves:



	n	P _{ed}	I	L _{WA}
	rpm ⁻¹	W	A	dB(A)
A 1	2640	56	0.56	—
A 2	2595	58	0.57	—
A 3	2550	61	0.58	—
A 4	2480	64	0.60	—
B 1	2980	67	0.58	—
B 2	2880	71	0.62	—
B 3	2790	75	0.65	—
B 4	2660	80	0.69	—
C 1	2630	60	0.30	—
C 2	2585	64	0.31	—
C 3	2530	66	0.31	—
C 4	2480	69	0.32	—
D 1	3000	70	0.31	—
D 2	2935	73	0.32	—
D 3	2850	77	0.34	—
D 4	2705	83	0.36	—

Air performance measured according to: ISO 5801, Installation category A. For detailed information on the measurement setup, contact ebm-papst. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Motor protection:** Thermal overload protector (TOP) connected internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Electrical hookup:** Via terminal strips, capacitor connected
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:**
 - Ⓐ Ⓑ EAC, UL 507, VDE, CSA C22.2 no. 113, CCC
 - Ⓒ Ⓓ EAC, UL 2111, VDE, CSA C22.2 no. 113, CCC



Max. 1880 m³/h

AC axial fans

□ 225 x 80 mm



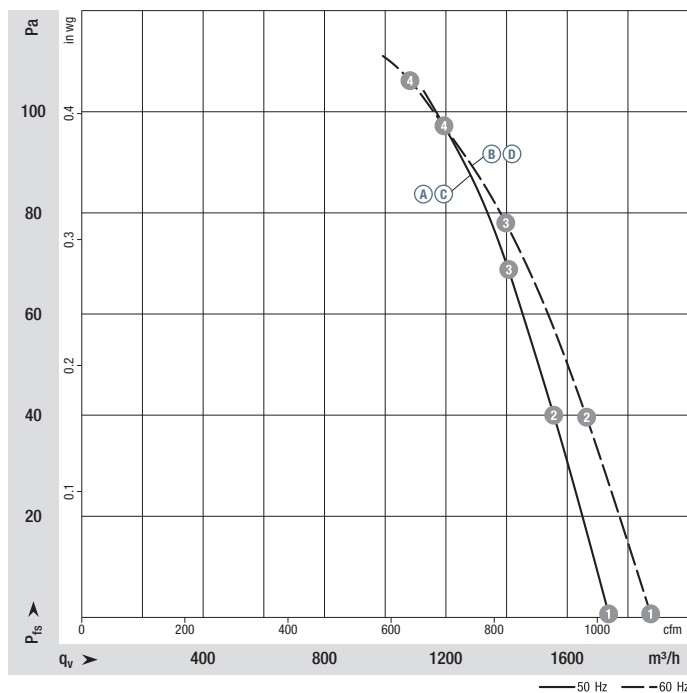
- **Material:** Housing: Die-cast-aluminum
Impeller: PP plastic
Rotor: Painted black
- **Number of blades:** 7
- **Direction of air flow:** "V"
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "F"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage	Frequency	Air flow	Nominal speed	Max. power consumption ⁽¹⁾	Max. input current ⁽¹⁾	Capacitor	Sound power level	Max. back-pressure	Admissible amb. temp.	Weight	Connection diagram
Type	Motor		VAC	Hz	m ³ /h	rpm ⁻¹	W	A	F/VDB	dB(A)	Pa	°C	kg	
W2E 250-HP08-01	M2E 068-CF	A	1~115	50	1740	2375	125	1.10	12/320	70	100	-25...+50	2.7	P. 263 / A3)
		B	1~115	60	1880	2350	165	1.45	12/320	72	110	-25...+45	2.7	
W2E 250-HP06-01	M2E 068-CF	C	1~230	50	1695	2320	125	0.55	3.0/400	70	100	-25...+60	2.7	P. 263 / A3)
		D	1~230	60	1840	2300	160	0.71	3.0/400	71	110	-25...+50	2.7	

Subject to change

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

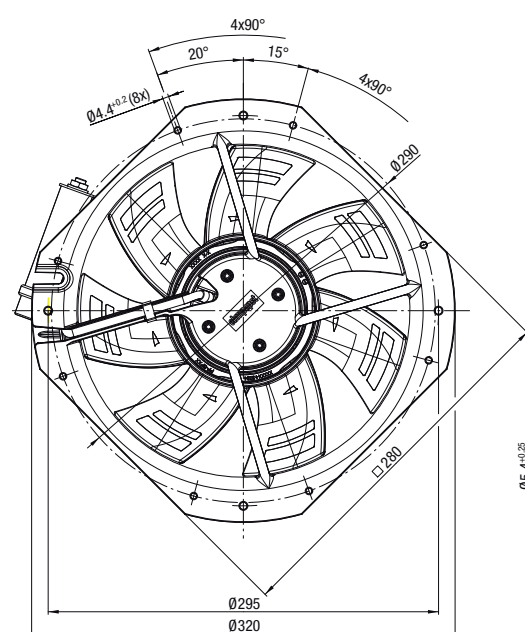
Curves:



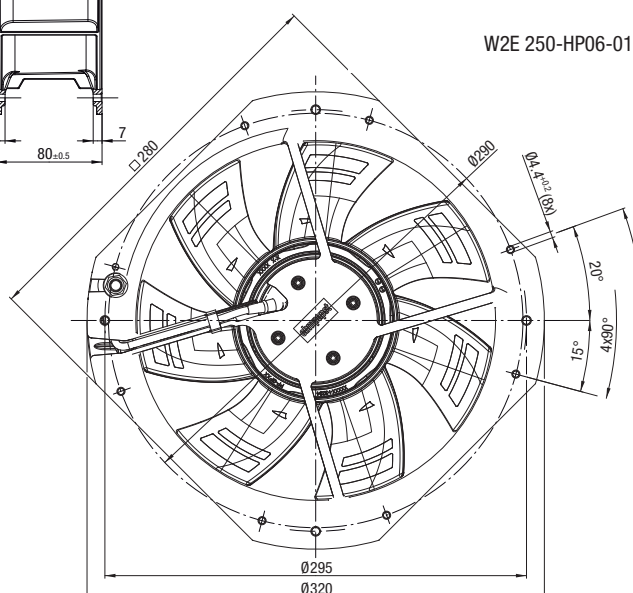
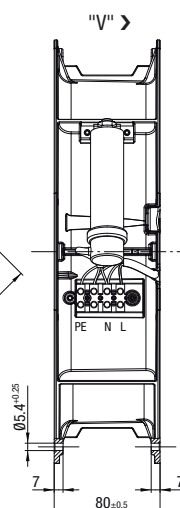
	n	P _{ed}	I	L _{WA}
	rpm ⁻¹	W	A	dB(A)
A 1	2580	108	0.96	70
A 2	2510	115	1.02	69
A 3	2455	121	1.06	68
A 4	2375	125	1.10	68
B 1	2785	149	1.30	72
B 2	2655	154	1.35	70
B 3	2490	162	1.41	70
B 4	2350	165	1.45	70
C 1	2550	101	0.44	70
C 2	2480	109	0.47	69
C 3	2410	115	0.50	68
C 4	2320	125	0.55	68
D 1	2750	134	0.59	71
D 2	2600	145	0.63	70
D 3	2420	152	0.66	69
D 4	2300	160	0.71	70

Air performance measured according to: ISO 5801, Installation category A. For detailed information on the measurement setup, contact ebm-papst. Suction-side noise levels: L_{WA} according to ISO 13347, L_{pA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

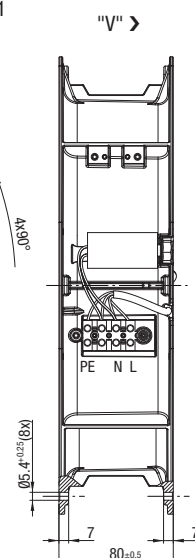
- **Motor protection:** Thermal overload protector (TOP) connected internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Variable
- **Electrical hookup:** Via terminal strips, capacitor connected
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:**
 - Ⓐ Ⓑ UL 2111, CSA C22.2 no. 77
 - Ⓒ Ⓓ EAC, UL 2111, CSA C22.2 no. 77



W2E 250-HP08-01



W2E 250-HP06-01



Max. 830 m³/h

AC diagonal module

Ø 200 mm



- Material:**
 - Housing: PA plastic
 - Support bracket: PA plastic
 - Impeller: PA plastic
 - Rotor: Painted black
- Number of blades:** 7
- Direction of air flow:** "V", single inlet
- Direction of rotation:** Clockwise, looking towards rotor
- Degree of protection:** IP 44, depending on installation and position
- Insulation class:** "F"
- Installation position:** Any
- Condensation drainage holes:** None
- Mode of operation:** Continuous operation (S1)
- Bearings:** Maintenance-free ball bearings

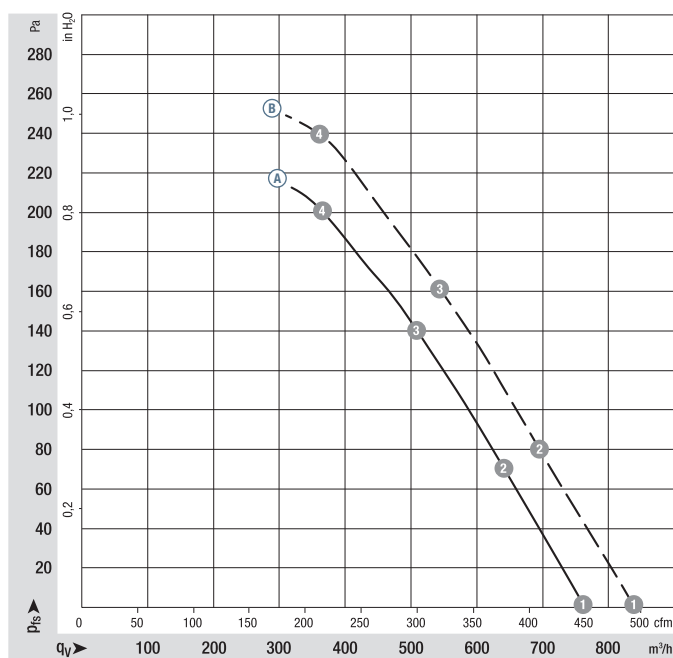
Nominal data

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Nominal speed	Power consumption	Input current	Capacitor	Sound power level	Max. back-pressure	Admissible amb. temp.	Weight	Connection diagram
			VAC	Hz	m ³ /h	rpm ⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
K2E 200-AA12 -01	M2E 068-CF	(A)	1 ~ 115	50	760	2650	64	0.56	6.0/250	70	200	-25...+65	2.1	P. 263 / A1)
		(B)	1 ~ 115	60	830	2910	88	0.77	6.0/250	72	240	-25...+65	2.1	

Subject to change

Curves:

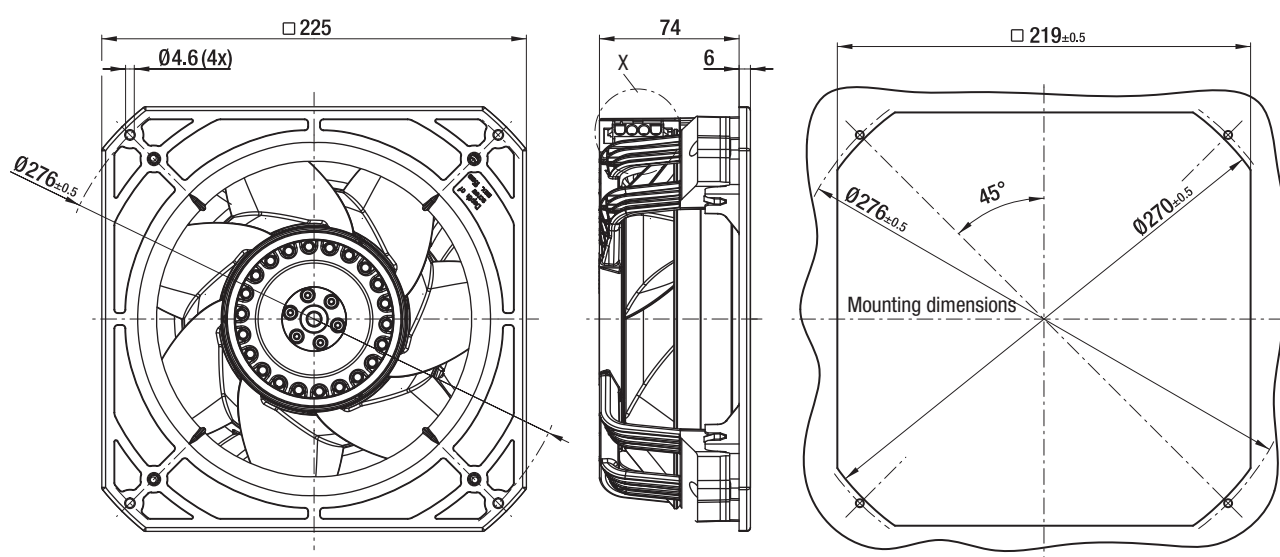
— 50 Hz
- - - 60 Hz



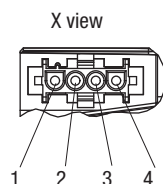
	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
(A) 1	2650	64	0.56	70
(A) 2	2610	67	0.59	68
(A) 3	2580	70	0.61	67
(A) 4	2590	69	0.61	69
(B) 1	2910	88	0.77	72
(B) 2	2815	93	0.81	69
(B) 3	2755	96	0.84	69
(B) 4	2780	95	0.83	71

Air performance measured according to: ISO 5801. Installation category A, without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347. L_{WA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Motor protection:** Thermal overload protector (TOP) connected internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Lateral
- **Electrical hookup:** Via connector
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:** UL 2111, CSA C22.2 no. 77



Coded plug system
 Universal Mate-N-Lok
 Connector shell: AMP 350 780-1
 3x plug pins: AMP 926 885-1
 Mating connector (not included in scope of delivery):
 Connector shell: AMP 350 779-4
 3x sockets: AMP 926 884-1



- 1 = not used
- 2 = N + capacitor
- 3 = L
- 4 = PE

Max. 845 m³/h

AC diagonal module

Ø 200 mm



- **Material:** Housing: PA plastic
Support bracket: PA plastic
Impeller: PA plastic
Rotor: Painted black
- **Number of blades:** 7
- **Direction of air flow:** "V", single inlet
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "F"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

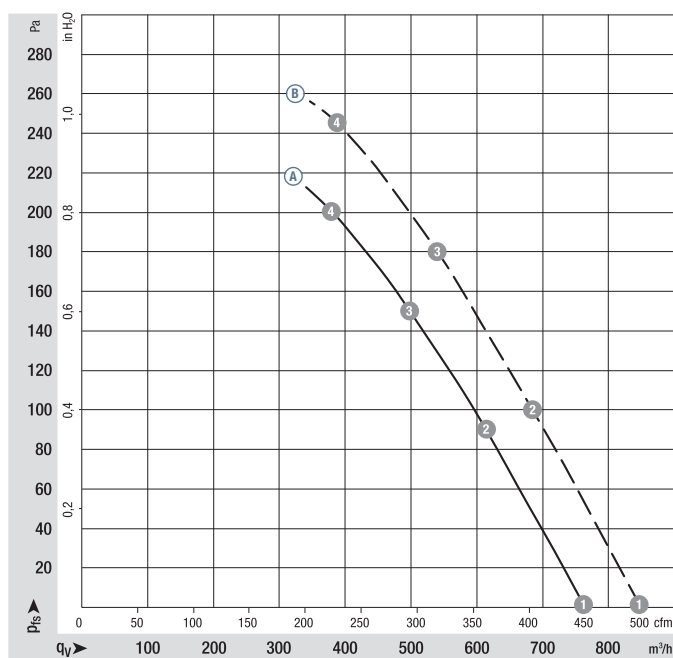
Nominal data

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Nominal speed	Power consumption	Input current	Capacitor	Sound power level	Max. back-pressure	Admissible amb. temp.	Weight	Connection diagram
			VAC	Hz	m ³ /h	rpm ⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
K2E 200-AA52 -02	M2E 068-CF	(A)	1 ~ 230	50	765	2650	65	0.30	2.0/400	70	200	-25...+80	2.1	p. 263 / A1)
		(B)	1 ~ 230	60	845	2950	90	0.40	2.0/400	73	245	-25...+80	2.1	

Subject to change

Curves:

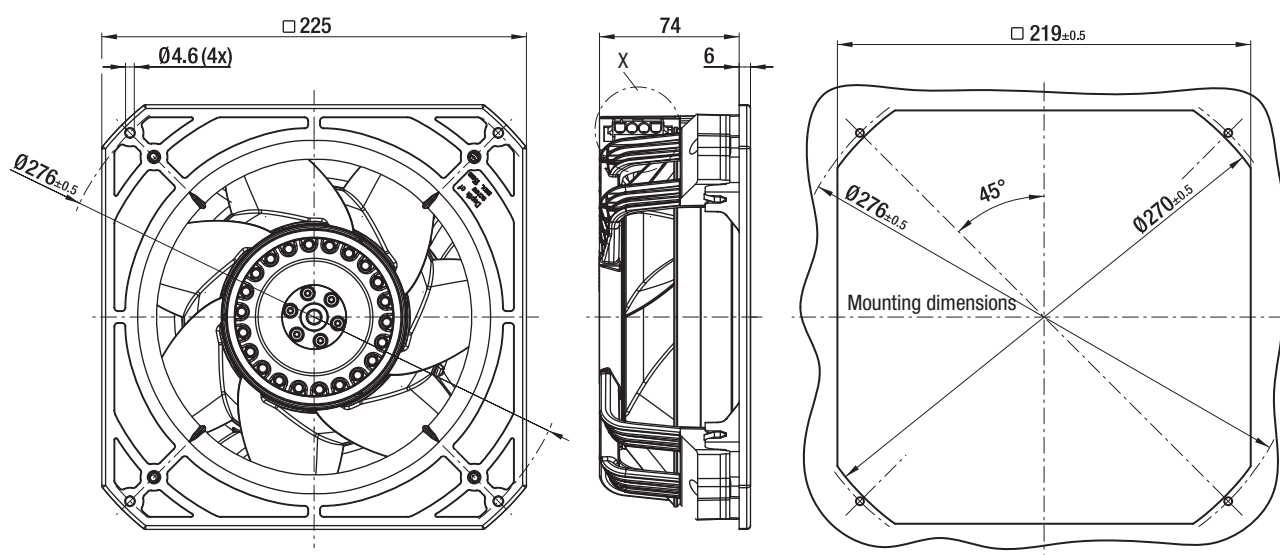
— 50 Hz
- - - 60 Hz



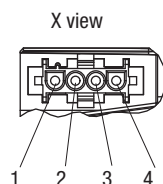
	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
(A) 1	2650	65	0.30	70
(A) 2	2620	67	0.30	68
(A) 3	2605	68	0.30	67
(A) 4	2610	68	0.30	69
(B) 1	2950	90	0.40	73
(B) 2	2865	93	0.41	70
(B) 3	2820	96	0.42	69
(B) 4	2840	94	0.41	71

Air performance measured according to: ISO 5801. Installation category A, without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347. L_{WA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Motor protection:** Thermal overload protector (TOP) connected internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Lateral
- **Electrical hookup:** Via connector
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE
- **Approvals:** UL 2111, CSA C22.2 no. 77



Coded plug system
 Universal Mate-N-Lok
 Connector shell: AMP 350 780-1
 3x plug pins: AMP 926 885-1
 Mating connector (not included in scope of delivery):
 Connector shell: AMP 350 779-4
 3x sockets: AMP 926 884-1



- 1 = not used
- 2 = N + capacitor
- 3 = L
- 4 = PE

Max. 880 m³/h

AC diagonal module

Ø 200 mm



- **Material:** Housing: PA plastic
Support bracket: PA plastic
Impeller: PA plastic
Rotor: Painted black
- **Number of blades:** 7
- **Direction of air flow:** "V", single inlet
- **Direction of rotation:** Clockwise, looking towards rotor
- **Degree of protection:** IP 44, depending on installation and position
- **Insulation class:** "F"
- **Installation position:** Any
- **Condensation drainage holes:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

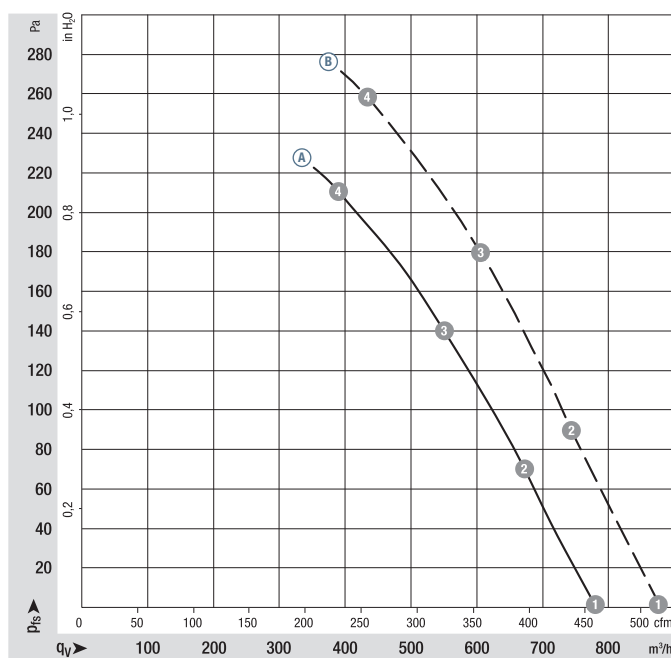
Nominal data

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Nominal speed	Power consumption	Input current	Capacitor	Sound power level	Max. back-pressure	Admissible amb. temp.	Weight	Connection diagram
			VAC	Hz	m ³ /h	rpm ⁻¹	W	A	µF/VDB	dB(A)	Pa	°C	kg	
K2D 200-AA02 -02	M2D 068-CF	(A)	3~ 400 Y	50	780	2700	65	0.15	—	71	210	-25...+75	2.0	P. 263 / C2)
		(B)	3~ 400 Y	60	880	3050	90	0.16	—	73	260	-25...+75	2.0	

Subject to change

Curves:

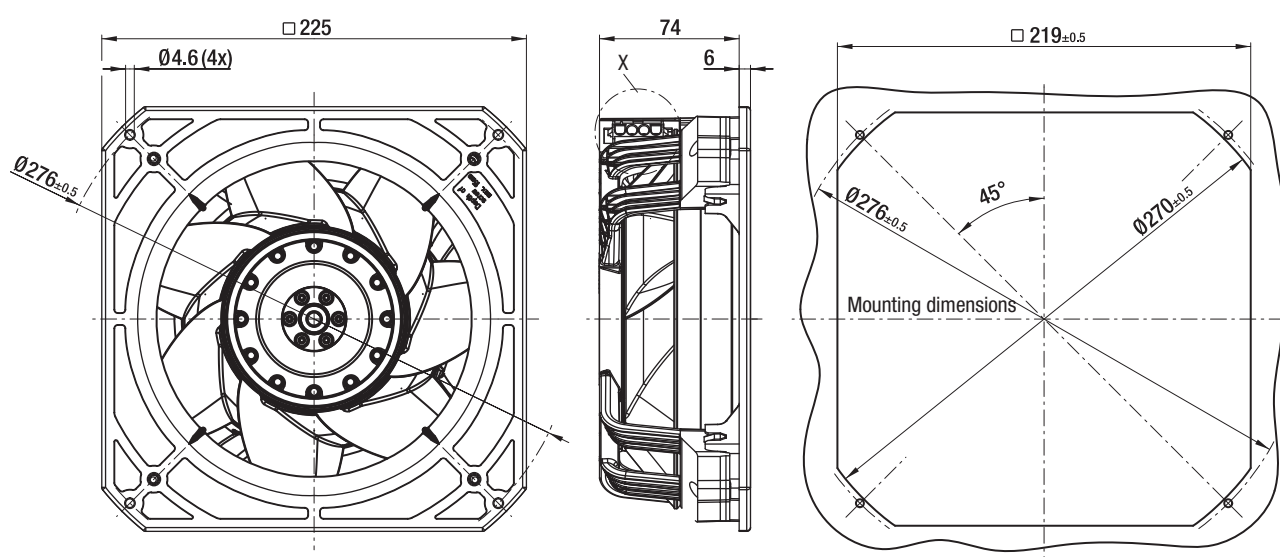
— 50 Hz
- - - 60 Hz



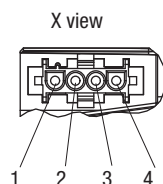
	n rpm ⁻¹	P _{ed} W	I A	L _{WA} dB(A)
(A) ①	2700	65	0.15	71
(A) ②	2695	69	0.16	69
(A) ③	2675	71	0.16	68
(A) ④	2680	70	0.16	69
(B) ①	3050	90	0.16	73
(B) ②	3010	94	0.16	71
(B) ③	2970	98	0.17	70
(B) ④	2975	96	0.17	72

Air performance measured according to: ISO 5801. Installation category A, without contact protection. Suction-side noise levels: L_{WA} according to ISO 13347. L_{WA} measured at 1 m distance from fan axis. The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions. In the event of deviation from the standard configuration, the parameters must be checked after installation! For detailed information see <http://www.ebmpapst.com/general-conditions>

- **Motor protection:** thermal overload protector wired internally
- **Touch current:** < 0.75 mA acc. to IEC 60990 (test circuit, illustration 4)
- **Cable exit:** Lateral
- **Electrical hookup:** Via connector
- **Protection class:** I (with customer connection to grounding conductor)
- **Conformity with standard(s):** EN 60335-1, CE



Coded plug system
 Universal Mate-N-Lok
 Connector shell: AMP 350 780-1
 4 x plug pins: AMP 926 885-1
 Mating connector (not included in
 scope of delivery):
 Connector shell: AMP 350 779-4
 4x sockets: AMP 926 884-1



1 = L3
 2 = L1
 3 = L2
 4 = PE



AC centrifugal fans



AC centrifugal fan overview
AC centrifugal fans

233
234

AC centrifugal fans

Technical information



Product line

The renowned ebm-papst AC fans are used when DC voltage is not available. The AC range of fans is based on experience gained from decades of development know-how, millions of units in series production, and the innovation competence of a world-wide technology pioneer.

In this catalog, we offer you the broad spectrum of our AC fans. In addition to complete systems, you will also find fans without external housing.

They offer economic benefits whenever the air duct design can be integrated in the respective device.

Variety of sizes

AC fans are available in a variety of sizes with either air exhaust or air intake over struts. Silent running models with sleeve bearings. Electrical connection with plug connection or external exposed connection wires are available.

Shaded-pole or capacitor motors

Fan drives by shaded-pole or capacitor motors, most of which incorporate the world-famous ebm-papst external rotor principle. The fan blades are directly attached to the external rotor of the external rotor motor. This construction combining high performance with profitability.

Flat built AC fans

ebm-papst also has AC fans with a particularly flat construction and an internal rotor motor. Their advantage: quick start to full speed. A plastic impeller and the smaller and lighter internal rotor motor result in lower rotational inertia.

Bearings

AC fans with sleeve bearings are powered by Class E insulated motors. Fans with ball bearings are equipped with Class B, E, or F insulated motors.

Degree of protection

All ebm-papst fans conform to the requirements of IP 20. Fans conforming to IP 54 / IP 68 and special degrees of protection are also available on request.

AC voltage

The line of AC fans for Euro voltage according to IEC 60038 (230 V $\pm$ 10 %) is also available in 115 V.

Frequencies

AC fans can be operated at frequencies of 50 or 60 Hz. In this case, their technical data changes accordingly.

Capacitor

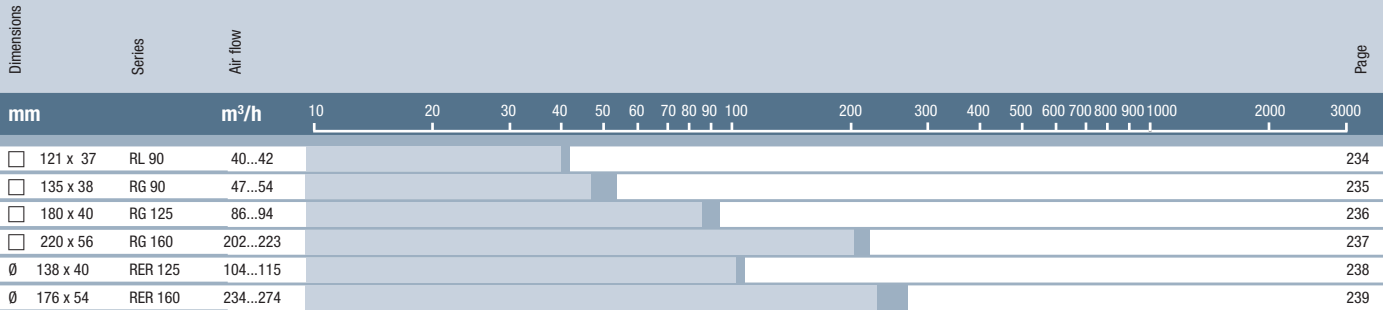
Fans driven by capacitor external motors provide particularly high operating efficiency. Generally, the required motor run capacitor is already integrated in the fan housing.

Overloading

Almost all AC fans are protected against overloading (e. g. due to locked rotor) – either impedance protected (marked "Impedance protected" or "Z. P.") or equipped with a thermal switch (marked "Thermally protected" or "Th. P."). The model designation of these fans ends with "S".

Centrifugal fans for AC operation

Overview of air performance



Subject to change

Overview of technically feasible designs

Dimensions	VDE, UL, CSA		SLIMTEC sleeve bearings/ Ball bearings		Speed signal		Moisture protection IP >= 54		IP 68		Salt spray protection		Page	
	Centrifugal fans													
mm	Series		OPTIONAL										P.	
☐ 121 x 37	RL 90	yes	☐ / ☒	–	☒	☒	–	☒				234		
☐ 135 x 38	RG 90	yes	☐ / ☒	–	☒	☒	–	☒				235		
☐ 180 x 40	RG 125	yes	☒	–	☒	☒	–	☒				236		
☐ 220 x 56	RG 160	yes	☒	–	☒	☒	–	☒				237		
Ø 138 x 40	RER 125	yes	☒	–	☒	☒	–	☒				238		
Ø 176 x 54	RER 160	yes	☒	–	☒	☒	–	☒				239		
Subject to change														
• available – not yet available ☐ Sleeve bearings ☒ Ball bearings														

Max. 42 m³/h

AC centrifugal fans

□ 121 x 37 mm



- **Material:** Scroll housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
Housing base: Sheet steel
- **Direction of air flow:** Centrifugal: discharge through window in housing
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** Via 2 single wires; housing base with flat plugs 6.3 x 0.8 mm for ground conductor
- **Highlights:** Forward-curved impeller
- **Weight:** 680 g
- **Possible special versions:** (See page 12)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

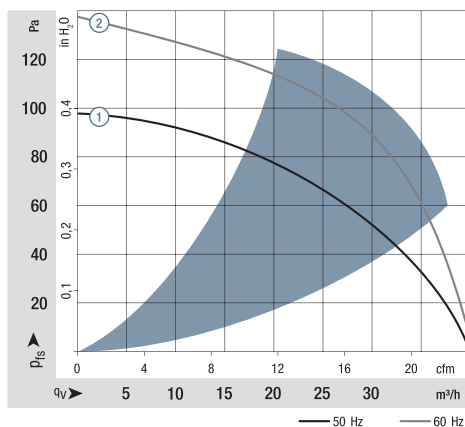
1) Fiberglass-reinforced plastic

Series RL 90

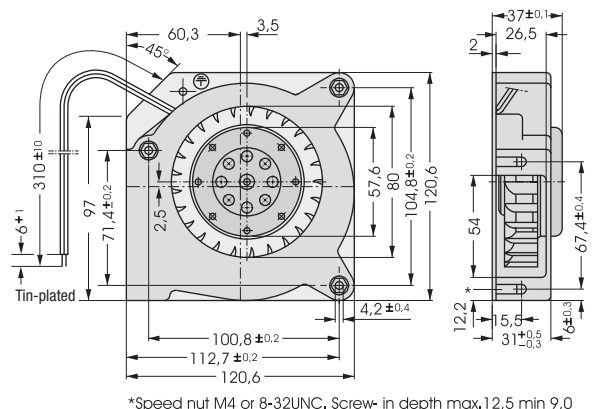
Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m³/h	cfm	VAC	Hz	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
RL 90-18/50	40	23.5	230	50	5.6	□	20.0	2 450	-10...+50	37 500 / 30 000		①
RL 90-18/56	40	23.5	230	50	5.6	■	20.0	2 450	-30...+70	37 500 / 20 000		①
RL 90-18/00	42	24.7	115	60	6.0	□	19.5	2 550	-10...+60	37 500 / 25 000		②
RL 90-18/06	42	24.7	115	60	6.0	■	19.5	2 550	-30...+85	37 500 / 15 000		②

Subject to change

Fan type		Connection wires
RL 90-18/50	RL 90-18/00	AWG 18, TR 32
RL 90-18/56	RL 90-18/06	AWG 22



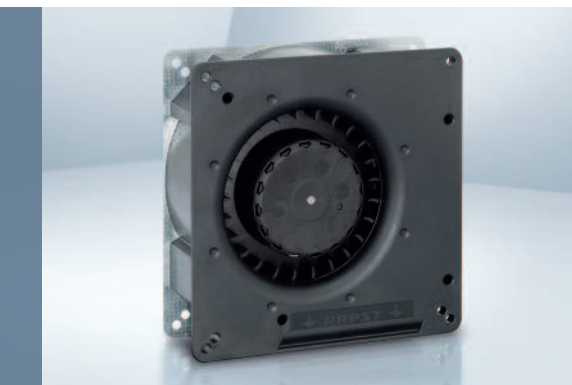
Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 10302 measured on a hemisphere with a radius of 2 m;
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions, described measurement set-up and may vary depending on the installation situation.
For detailed information see <http://www.ebmpapst.com/general-conditions>



Max. 54 m³/h

AC centrifugal fans

□ 135 x 38 mm



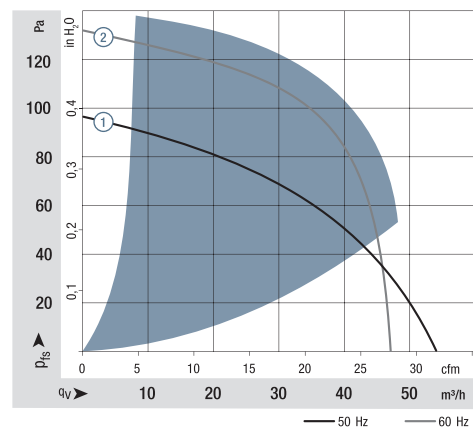
- **Material:** Scroll housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
Housing base: Sheet steel
- **Direction of air flow:** Centrifugal: discharge through window in housing
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** To 2 single wires AWG 22.
- **Highlights:** Forward-curved impeller
- **Weight:** 560 g
- **Possible special versions:** (See page 12)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

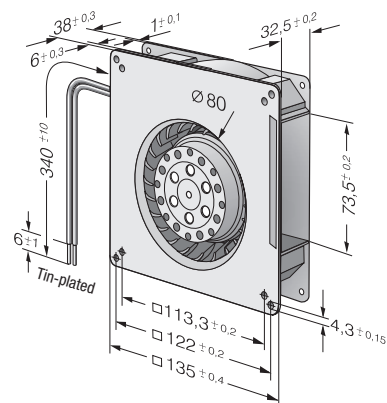
Series RG 90

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	Bel(A)	□ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
RG 90-18/50	54	32	230	50	5.8	□	22.0	2 200	-30...+60	35 000 / 22 500		①
RG 90-18/56	54	32	230	50	5.8	■	22.0	2 200	-30...+60	35 000 / 22 500		①
RG 90-18/00	47	28	115	60	6.2	□	22.0	1 900	-30...+65	35 000 / 20 000		②
RG 90-18/06	47	28	115	60	6.2	■	22.0	1 900	-30...+65	35 000 / 20 000		②

Subject to change



Air performance measured according to: ISO 5801.
Installation category A, without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a radius of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see <http://www.ebmpapst.com/general conditions>



Max. 94 m³/h

AC centrifugal fans

□ 180 x 40 mm



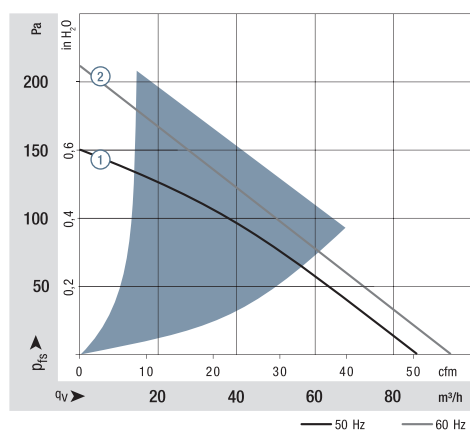
- **Material:** Scroll housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
Housing base: Sheet steel
- **Direction of air flow:** Centrifugal: discharge through window in housing
- **Direction of rotation:** Clockwise, looking towards rotor
- **Connection:** To 2 single wires AWG 22.
- **Highlights:** Backward-curved impeller
- **Weight:** 850 g
- **Possible special versions:** (See page 12)
- Moisture protection
- Salt spray protection
- Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series RG 125

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m³/h	cfm	VAC	Hz	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
RG 125-19/56	86	51	230	50	5.8	■	20.0	2 550	-30...+70	37 500 / 20 000		①
RG 125-19/06	94	55	115	60	6.0	■	19.0	2 750	-30...+80	40 000 / 15 000		②

Subject to change



Max. 223 m³/h

AC centrifugal fans

□ 220 x 56 mm

Information

DC axial fans

DC centrifugal fans

DC fans - specials

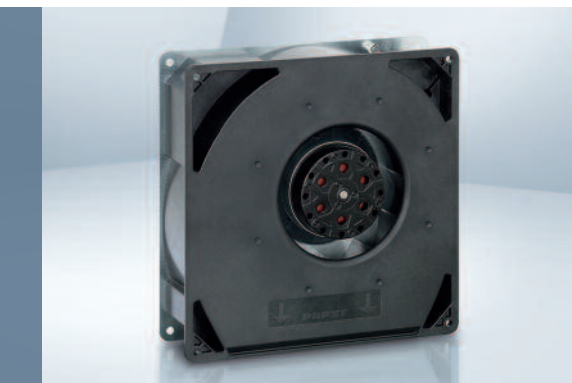
ACmaxx / EC fans

AC axial fans

AC centrifugal fans

Accessories

Representatives



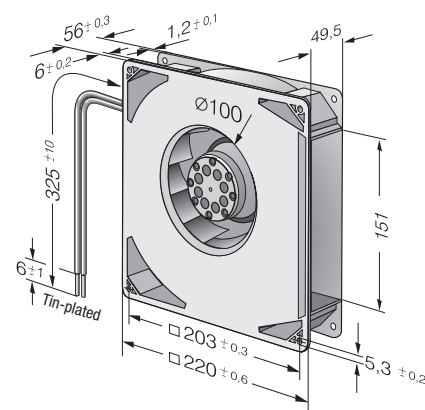
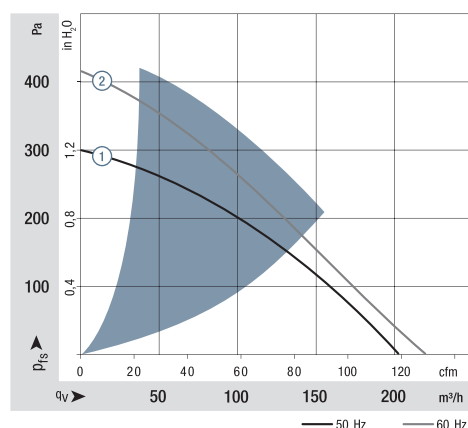
- **Material:** Scroll housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
Housing base: Sheet steel
- **Direction of air flow:** Centrifugal: discharge through window in housing
- **Direction of rotation:** Counterclockwise, looking towards rotor
- **Connection:** To 2 single wires AWG 18.
- **Highlights:** Backward-curved impeller
- **Weight:** 1.7 kg
- **Possible special versions:** (See page 12)
- Moisture protection

1) Fiberglass-reinforced plastic

Series RG 160

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
RG 160-28/56S	202	119	230	50	6.6	■	47.0	2 750	-30...+70	30 000 / 15 000		①
RG 160-28/06S	223	131	115	60	6.9	■	50.0	3 050	-30...+80	27 500 / 12 500		②

Subject to change



Max. 115 m³/h

AC centrifugal fans

Ø 138 x 40 mm



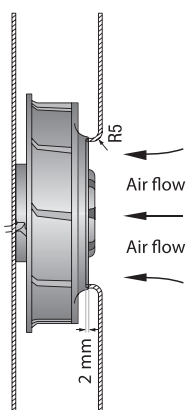
- **Material:** Scroll housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
with sheet steel reinforced
- **Direction of air flow:** centrifugal
- **Direction of rotation:** Clockwise,
looking towards rotor
- **Connection:** To 2 single wires AWG 22.
- **Highlights:** Backward-curved impeller
- **Weight:** 500 g
- **Possible special versions:**
(See page 12)
 - Moisture protection
 - Salt spray protection
 - Degree of protection: IP 54

1) Fiberglass-reinforced plastic

Series RER 125

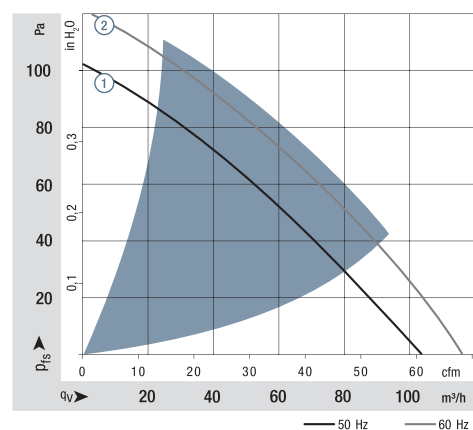
Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
RER 125-19/56	104	61	230	50	6.2	■	19.0	2 600	-30...+60	37 500 / 22 500		①
RER 125-19/06	115	68	115	60	6.5	■	18.0	2 850	-30...+70	40 000 / 20 000		②

Subject to change

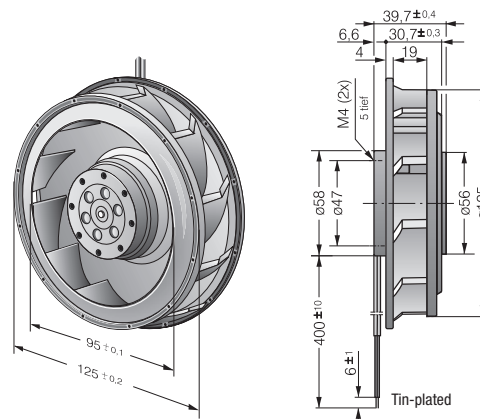


The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions. The stated air flow and noise levels have been measured under the following conditions:

Centrifugal fan mounted on a base plate
220 x 220 mm.
Cover plate 220 x 220 mm with an air inlet of
Ø 86 mm, concentric to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.
The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>



Max. 274 m³/h

AC centrifugal fans

Ø 176 x 54 mm



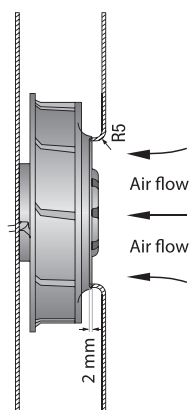
- **Material:** Scroll housing: GRP¹⁾ (PBT)
Impeller: GRP¹⁾ (PA)
with sheet steel reinforced
- **Direction of air flow:** centrifugal
- **Direction of rotation:** Counterclockwise,
looking towards rotor
- **Connection:** To 2 single wires AWG 18.
- **Highlights:** Backward-curved impeller
- **Weight:** 1.0 kg
- **Possible special versions:**
(See page 12)
- Moisture protection

1) Fiberglass-reinforced plastic

Series RER 160

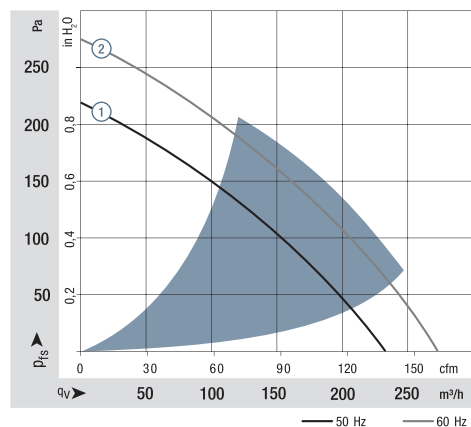
Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sintec sleeve bearings Ball bearings	Power consumption	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	cfm	VAC	Hz	Bel(A)	■ / ■	Watts	rpm ⁻¹	°C	Hours	Hours	
RER 160-28/56S	234	138	230	50	6.6	■	45.0	2 800	-30...+60	30 000 / 20 000		①
RER 160-28/06S	274	161	115	60	6.8	■	46.0	3 250	-30...+70	30 000 / 15 000		②

Subject to change



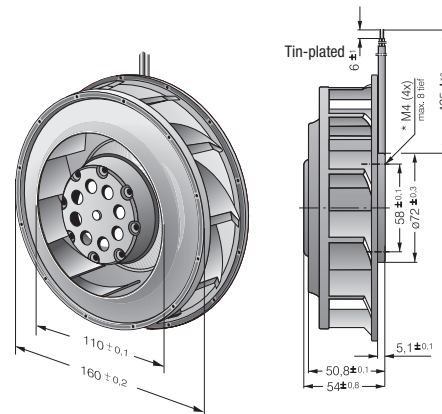
The air flow and sound level of the centrifugal fans without external housing depend on their individual installation conditions. The stated air flow and noise levels have been measured under the following conditions:

Centrifugal fan mounted on a base plate
260 x 260 mm.
Cover plate 260 x 260 mm with an air inlet of
Ø 100 mm, concentric to the impeller.



Air performance measured according to: ISO 5801.
Installation category A, with ebm-papst inlet ring without contact protection.
Noise: Total sound power level L_{WA} ISO 103002 measured on a hemisphere with a distance of 2 m.
Sound pressure level L_{PA} measured at 1 m distance from fan axis.

The values given are applicable only under the specified measuring conditions and may differ depending on the installation conditions.
In the event of deviation from the standard configuration, the parameters must be checked after installation!
For detailed information see
<http://www.ebmpapst.com/general conditions>





Accessories



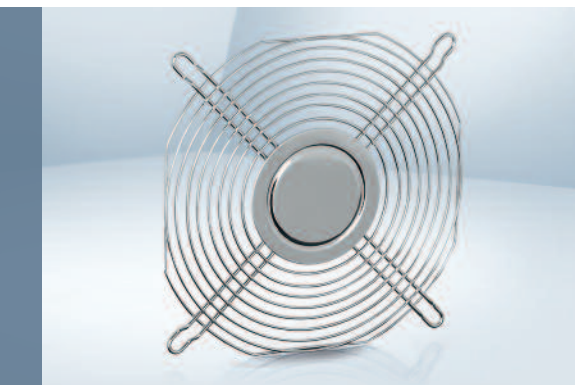
Finger guards	242
Filter fan guards	250
Inlet rings	252
Connection cables / Accessories	255
Connection diagrams	258

ebm-papst offers a comprehensive selection of accessories for optimum fan operation, from temperature sensors for speed-controlled fans, to finger guards for all variants, to cables, filters, and screens, to spacers and installation parts. Even in the case of very special parts, you can be sure: We will assist you every way possible. The sales experts at ebm-papst will be happy to assist you with your question concerning fan installation and use.

From selection to accessories:

Insist on the efficient and reliable service provided by ebm-papst.

Finger guards



- **Material:** Galvanized or nickel-plated steel wire
- **Note:** Finger guard according to DIN EN ISO 13857 (previously EN 294). Additional finger guards that do not satisfy DIN EN ISO 13857 available on request. Our finger guards are designed specifically to be used with ebm-papst fans. They combine the highest degree of safety with minimum effect on the operating noise. Please note that the safety-related clearances cannot be guaranteed when finger guards made by other manufacturers are used.

Fan series	Part no.
400	LZ29-1
420 J	LZ29-1
500	LZ31
600	LZ28-1
3000	LZ23-1
8000	LZ32-4 / LZ22-2
9000	LZ30-4 / LZ 30 / LZ 30-3
4000	LZ30-4 / LZ 30 / LZ 30-3

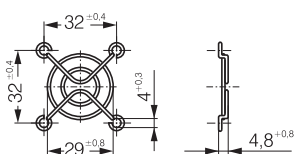
Fan series	Part no.
5100	LZ25
5600	LZ25
5200	LZ35
5300	LZ53
5900	LZ35
7000	LZ36
6300	LZ37
6400	LZ38

Fan series	Part no.	Side
2200 F	LZ22	
DV 4100	LZ30-4	Intake/outlet
DV 5200	LZ35	Intake/outlet
DV 6300 TD	LZ37	Intake side
DV 6300 TD	LZ52	Outlet side
DV 6400	LZ38	Intake side
DV 6400	LZ39	Outlet side

Subject to change

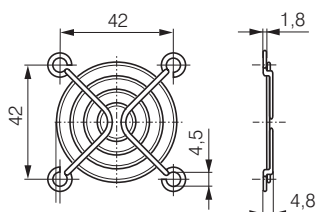
LZ29-1

Fan size 40 x 40



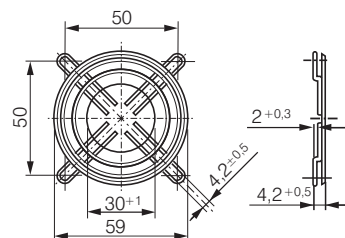
LZ31

Fan size 50 x 50



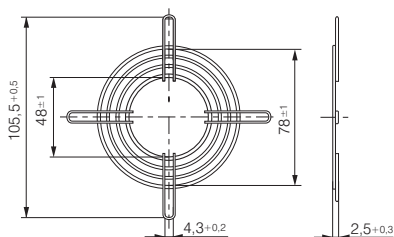
LZ28-1

Fan size 60 x 60



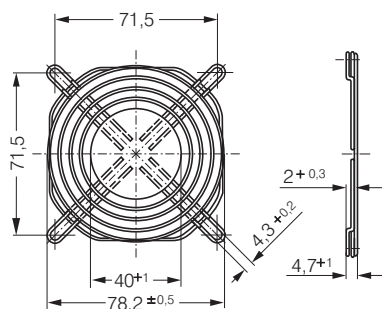
LZ22-2

Fan size 80 x 80



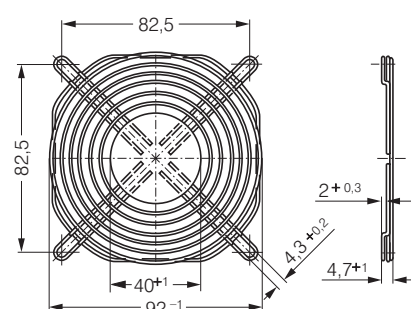
LZ32-4

Fan size 80 x 80



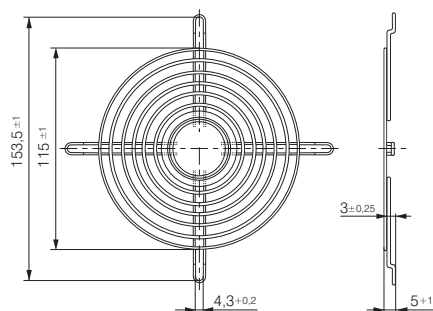
LZ23-1

Fan size 92 x 92



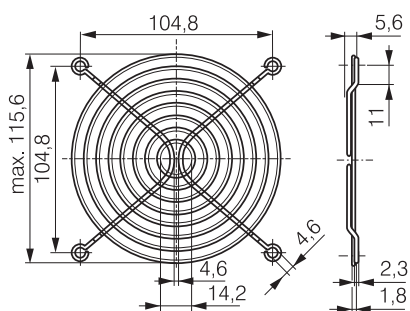
LZ30

Fan size 119 x 119



LZ30-3

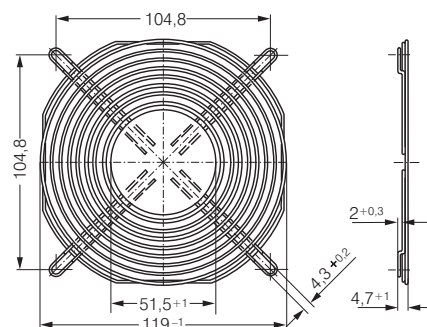
Fan size 119 x 119



Also called LZ 30
for North America only.

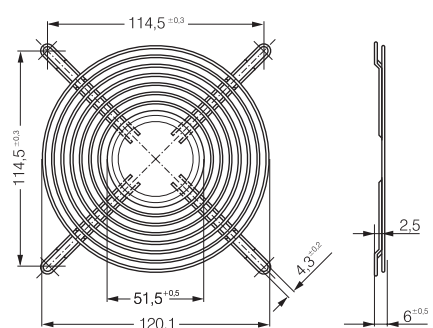
LZ30-4

Fan size 119 x 119



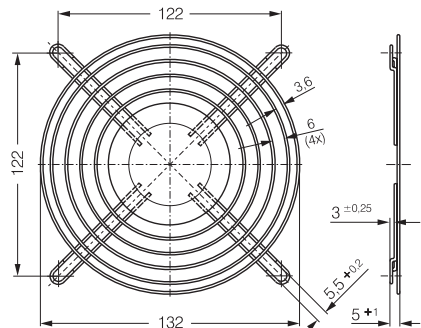
LZ35

Fan size 127 x 127



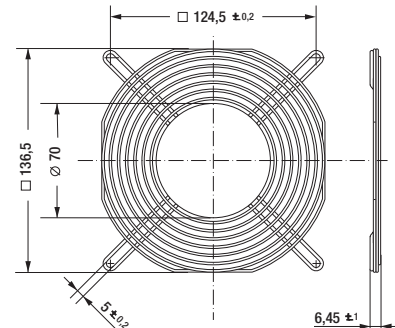
LZ25

Fan size 135 x 135



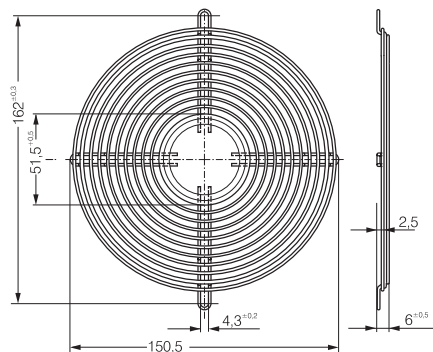
LZ53

Fan size 140 x 140



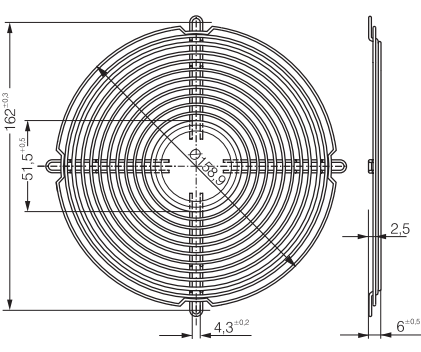
LZ36

Fan size 150 x 172



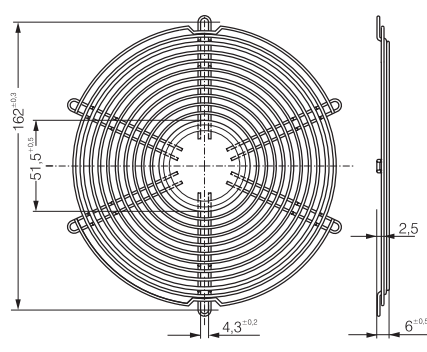
LZ37

Fan size 172 x 51



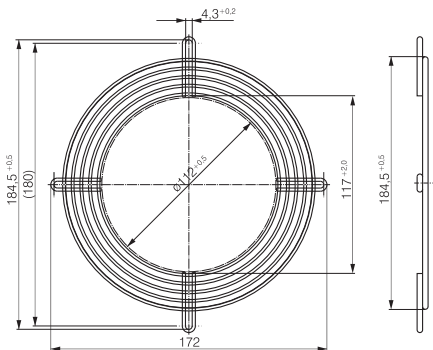
LZ38

Fan size 172 x 51



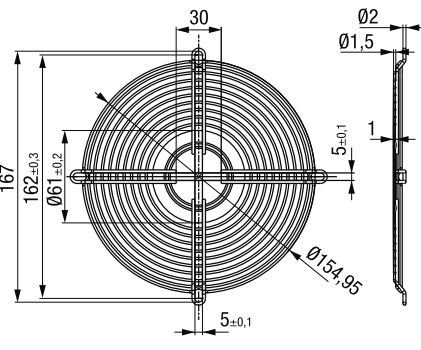
LZ39

Fan size 172 x 51



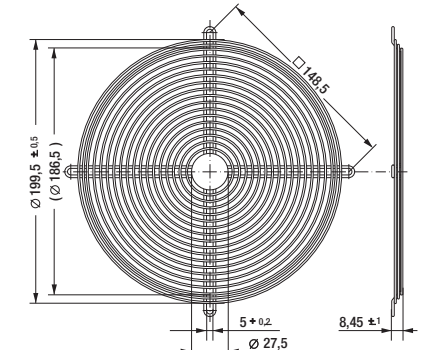
LZ52

Fan size 172 x 51

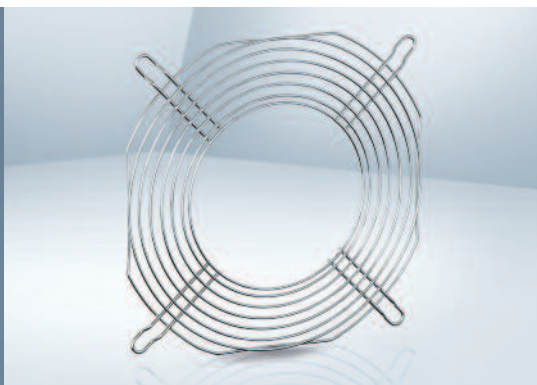


LZ22

Fan size 200 x 51



Finger guards



- **Material:** Galvanized or nickel-plated steel wire
- **Note:** Finger guard according to DIN EN ISO 13857 (previously EN 294).
The finger guard detailed on this page are intended specifically for the ACmaxx / GreenTech EC tubeaxial fan ranges and are mounted on the outlet side.

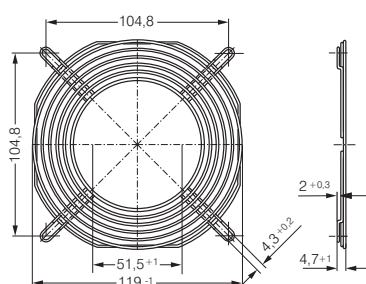
Fan series	Part no.	Side
AC 8300 H	LZ32-4	Intake
AC 8300 H	LZ32-7	Outlet
AC 3200 J	LZ23-1	Intake
AC 3200 J	LZ23-6	Outlet
AC 4400 FN	LZ30-4	Intake
AC 4400 FN	LZ30-9	Outlet
AC 4300	LZ30-4	Intake
AC 4300	LZ30-9	Outlet

Fan series	Part no.	Side
ACi 4400	LZ30	Intake
ACi 4400	LZ30	Outlet
AC 6200 N	LZ37	Intake
AC 6200 N	LZ37-2	Outlet

* Outlet-side guards on request

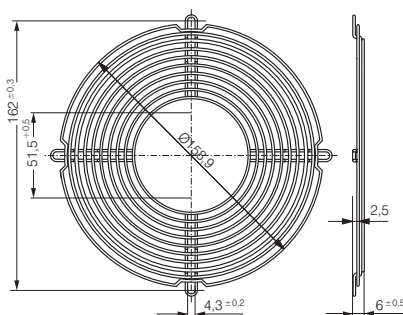
LZ30-9

Fan size 119 X 119



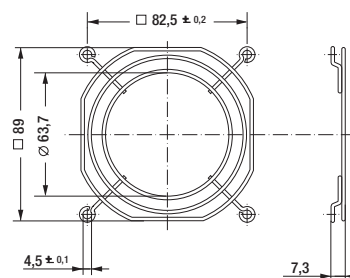
LZ37-2

Fan size Ø 172 X 51



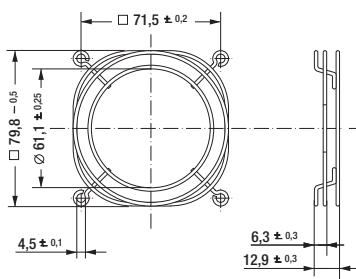
LZ23-6

Fan size 92 x 92

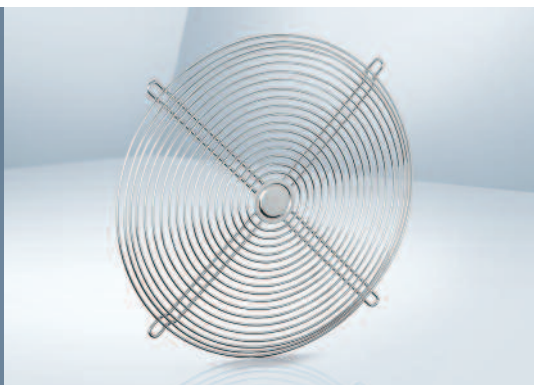


LZ32-7

Fan size 80 x 80



Finger guards



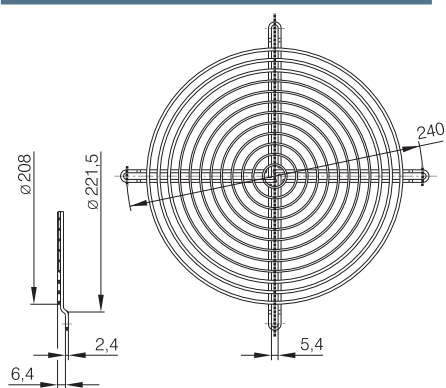
- **Material:** Steel wire, plastic-coated, with silver-metallic gloss

Fan series	Part no.
W3G 200	78128-2-4039

Fan series	Part no.
W1G 250	09418-2-4039
W3G 250	09418-2-4039

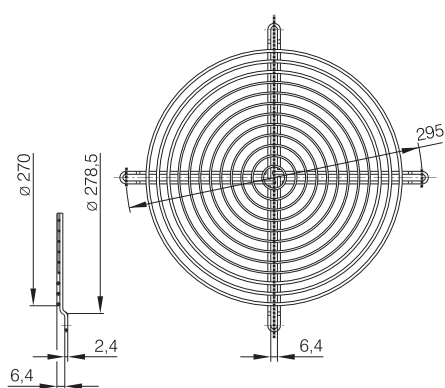
78128-2-4039

Fan size 200

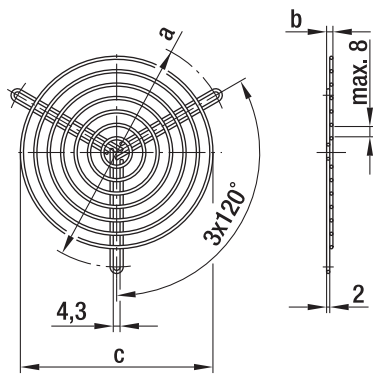


09418-2-4039

Fan size 250



Finger guards

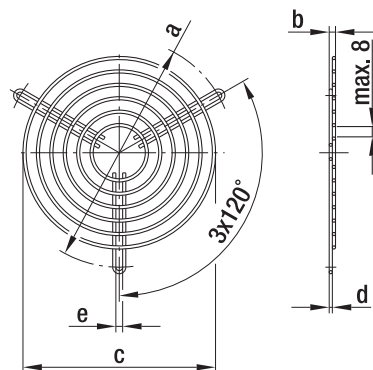


– **Material:** Steel wire

Finger guards for centrifugal blowers with dual inlet

Part no.	Fan size	a	b	c	Coating
83319-2-4039	097 ⁽¹⁾	96.0	3.5	71.0	Phosphated, plastic-coated in RAL no. 9005
09485-2-4039	097 ⁽²⁾	114.0	3.5	88.0	Phosphated, plastic-coated in RAL no. 9005
09500-2-4039	133 / 146	145.0	4.0	122.0	Phosphated, plastic-coated in RAL no. 9005

Subject to change (1) for D2E097-CH (2) for D2E097-B*



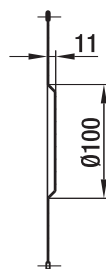
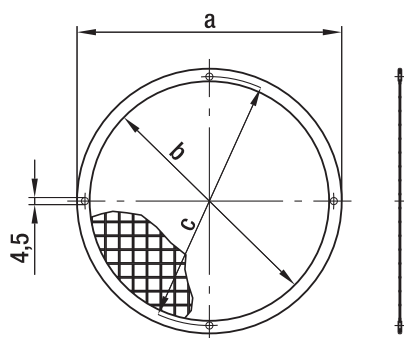
– **Material:** Phosphated steel wire, plastic-coated, silver-metallic gloss

Finger guards for centrifugal blowers with dual inlet (versions with EW motor)

Part no.	Fan size	a	b	c	d	e
35000-2-4039	160	182.0	12.0	144.0	2.4	4.5

Subject to change

Finger guards



- **Material:** Welded screens made of hot-dip galvanized steel, border made of tin (0.4 mm thick)

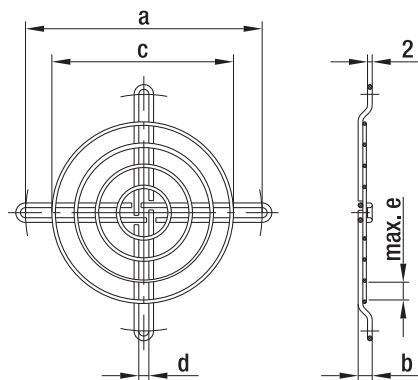
⁽⁴⁾ Fan size 160

Finger guards for centrifugal blowers with single inlet

Part no.	Fan size	a	b	c
09489-2-4039	085 ⁽³⁾	90.0	74.0	84.0
09490-2-4039	108	126.0	110.0	118.0
09494-2-4039	120	140.0	124.0	132.0
09492-2-4039	140 / 146	168.0	152.0	158.0
09503-2-4039	160 ⁽⁴⁾	183.0	170.0	175.0

Subject to change

⁽³⁾ 3 drilled holes staggered by 120°



- **Material:** Steel wire

Finger guards for centrifugal blowers with single inlet

Part no.	Fan size	a	b	c	d	e	Coating
09603-2-4039	076 / 085	101.0	6.0	79.0	4.3	8.0	Plastic coated, silver-metallic gloss
98214-2-4039	108	120.0	3.5	88.0	4.3	8.0	Plastic coated, silver-metallic gloss
25028-2-4039	140 / 146	162.0	8.5	139.0	4.3	8.0	Galvanized, chromated in blue
17729-2-4039	160	175.0	3.5	139.0	4.6	7.0	Galvanized, chromated in blue

Subject to change

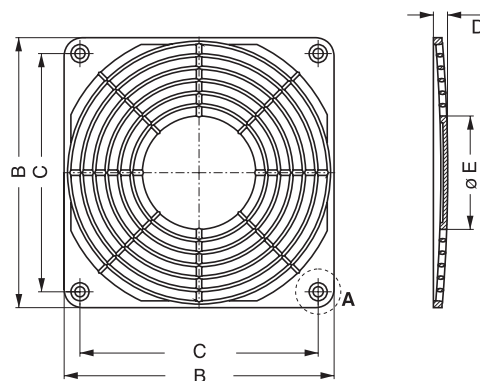
Finger guards



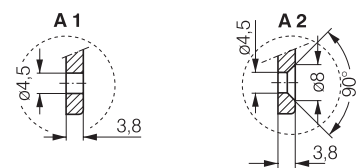
- **Material:** Fiberglass-reinforced plastic
- **Note:** Finger guard according to DIN EN ISO 13857 (previously EN 294).
Plastic guards may not be used for the following models:
8200 JH3 / JH4
3200 JH3 / JH4
4100 NH5 - NH8

Part no.	Mounting	B	C	D	E	Part no.	Mounting	B	C	D	E
LZ28-3	A3	60 ^{-0.5}	50.0 ^{±0.2}	3.0	24	LZ30-5	A2	119 ^{-0.5}	105 ^{±0.2}	6.5	50
LZ32-2	A1	80 ^{-0.5}	71.5 ^{±0.2}	7.0	34	LZ30-6	A4	119 ^{-0.5}	105 ^{±0.2}	6.5	50
LZ32-3	A3	80 ^{-0.5}	71.5 ^{±0.2}	7.0	34	LZ33-1	A2	127 ^{-0.5}	113.5 ^{±0.2}	6.5	50
LZ23-2	A1	92.5 ^{-0.5}	82.5 ^{±0.2}	6.5	46	LZ33-2	A4	127 ^{-0.5}	113.5 ^{±0.2}	6.5	50
LZ23-3	A3	92.5 ^{-0.5}	82.5 ^{±0.2}	6.5	46	Subject to change					

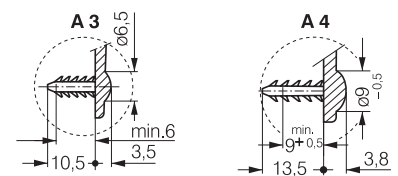
LZ28-3	Fan size 60 x 60
LZ32-2 / LZ32-3	Fan size 80 x 80
LZ23-2 / LZ23-3	Fan size 92 x 92
LZ30-5 / LZ30-6	Fan size 119 x 119
LZ33-1 / LZ33-2	Fan size 127 x 127



Screw connection

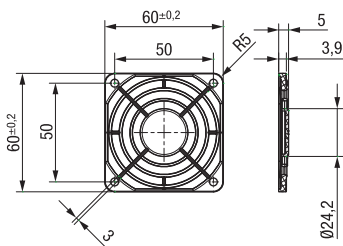


Barbed inserts

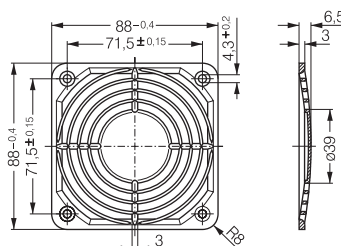


Only suitable for bore hole diameter
4.3 - 4.7.

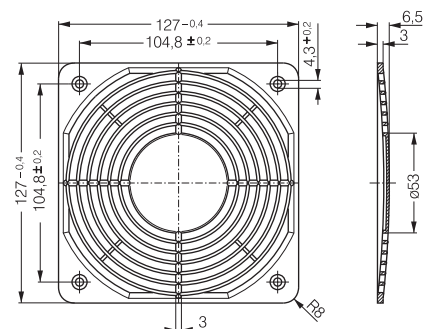
LZ28-3	Fan size 60 x 60
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LZ32P	Fan size 80 x 80
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LZ30P	Fan size 119 x 119
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Finger guards

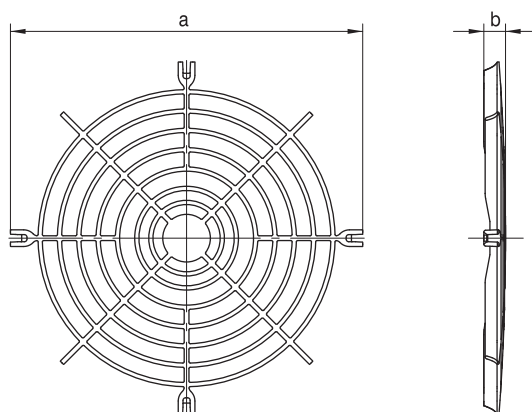
For compact centrifugal modules



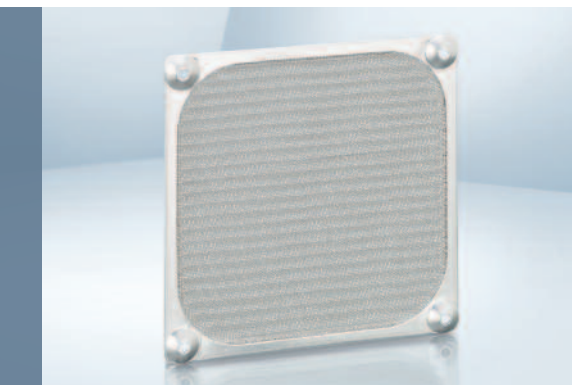
- **Material:** PA plastic, fiberglass-reinforced
- **Highlights:** Flame protection class in line with UL 94V-0

Fan series	Part no.	a	b
RG 190	LZ46-1	133	9.0
RG 220	LZ47-1	166	8.7
RG 225	LZ48-1	158	8.7

Subject to change

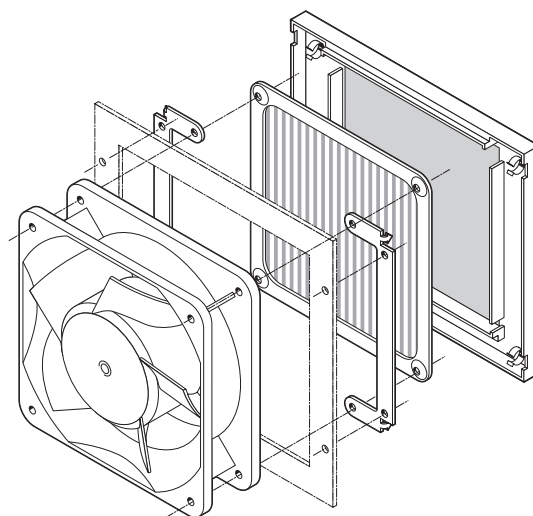


Filter fan guards



- **Material:** Filter guard LZ40 N: black, fiberglass-reinforced plastic with inserted wire mesh LZ60.
Coarse filter LZ60: stainless steel wire mesh
Mounting lug LZ40-1 for mounting

DC fan series	AC fan series
4400 F	AC 4300
4400 FN	9900
4300	4000 N
4400	4000 Z
4100 N	Subject to change



LZ40N	Filter guard	LZ40-1	Mounting lug	LZ60	Coarse filter

Filter fan guards



- **Material:** Guard cover: Injection-molded polycarbonate (PC) with mat surface.
Mounting plate: wire mesh with black powder coating
Filter pad: white, synthetically bonded fibers
- **Note:**
Filter fan guards suitable for fitting on axial fan series in sizes:
60 mm, 80 mm, 92 mm, 119 mm, Ø 172 mm. All filter units fit directly on the existing mounting holes of the fans.
Filter fan guards consisting of 3 parts: external guard cover, internal mounting plate, and replaceable filter pad.
The filter pad can be replaced quickly and easily via a quick release on the guard cover.
The filter pads can be replaced even while the fan is running, as protection is provided by the welded wire mesh.

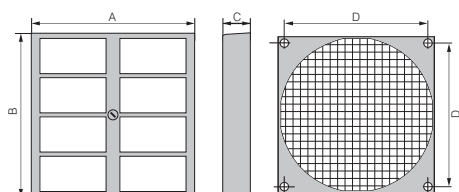
Part no.	Fan size	A	B	C	D	Part no. Replacement filter*
FF60	60 x 60 mm	65	65	13.5	50.0	RF 60
FF80	80 x 80 mm	85	85	14.0	71.5	RF 80
FF92	92 x 92 mm	125	105	17.5	82.5	RF 92
FF119	119 x 119 mm	162	136	18.5	104.5	RF 119
FF172	Ø 172 mm	226	190	19.5	162.0	RF 172

Subject to change

* Replacement filter available only in packages of 5.

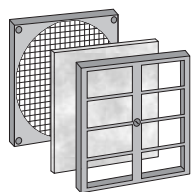
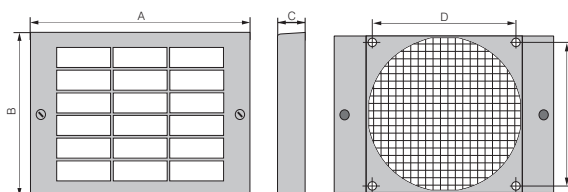
FF60 / FF80

Fan size: 60 x 60 mm
80 x 80 mm



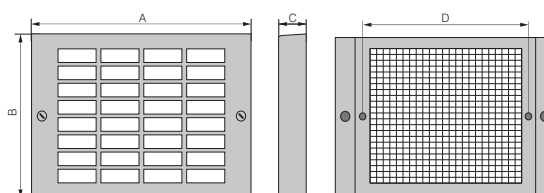
FF92 / FF 119

Fan size: 92 x 92 mm
119 x 119 mm



FF 172

Fan size: Ø 172 mm



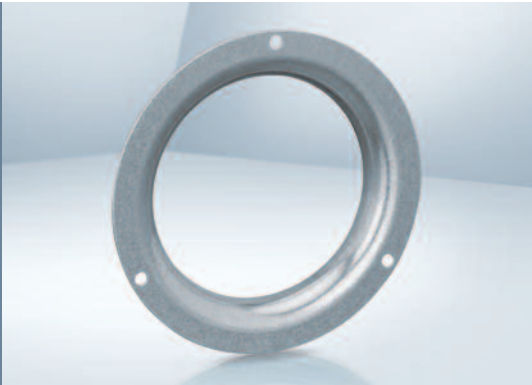
Filter performance

The filter fan guard filters 75% of dust particles with a size of 5-10 microns and can withstand temperatures of up to 100 °C. Filter class G3 according to DIN EN 779. Flame-retardant according to DIN 53438, class F1. When a clean filter is installed, a reduction of air flow of 20-30% is possible.

Inlet rings

For centrifugal fans

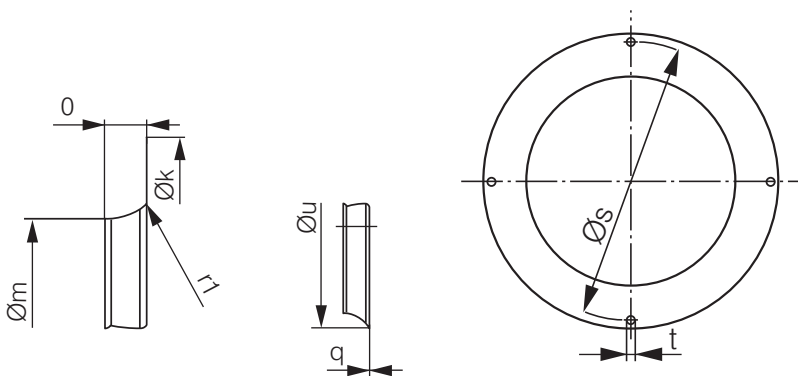
– **Material:** Galvanized sheet steel



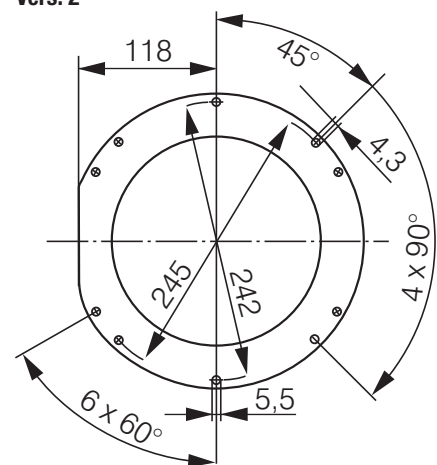
Fan	Part no.	k	m	o	q	r ₁	s	t	u	Vers.
RET 97 (S)	LZ 1000-097	116,0	80,0	10,0	0,80	10,0	108,0	3x4,5	–	1
RER 120 (K)	LZ 1000-120	146,0	94,4	18,0	0,80	16,0	134,0	4x4,5	126,0	1
RER 133 (K)	LZ 1000-133	129,0	87,0	13,0	1,00	8,0	118,0	4x4,5	103,0	1
RER 160 (S)	LZ 1000-160	142,0	100,0	9,0	1,00	8,0	132,0	4x4,5	–	1
RER 175 / 190 (K)	LZ 1000-175	170,0	125,5	14,0	1,25	10,0	158,0	4x4,5	146,0	1
RER 220 (K)	LZ 1000-220	252,0	155,0	21,0	0,80	22,0	–	–	199,0	2
RER 225 (K)	LZ 1000-225	223,0	146,0	28,0	1,50	25,0	210,0	4x4,5	196,0	1

(P) = plastic, (S) = galvanized sheet steel

Vers. 1

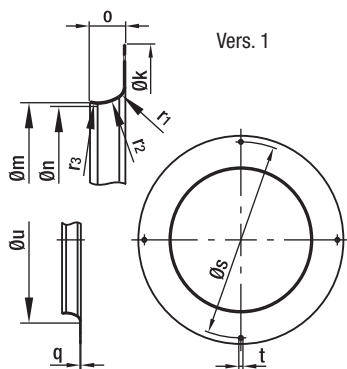


Vers. 2



Inlet rings

For centrifugal fans



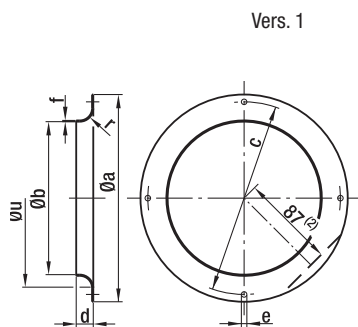
– **Material:** Galvanized sheet steel

Inlet rings for backward curved centrifugal fans

Part no.	Fan size ⁽¹⁾	Vers.	k	m	n	o	q	r ₁	r ₂	r ₃	s	t	u
96120-2-4013	120 (P)	1	146.0	94.4	—	18.0	0.80	16.0	—	—	134.0	4x4.5	126.0

Subject to change

(1) Fan size with key for impeller material: (P) = plastic, (S) = sheet steel, (A) = aluminum



– **Material:** Galvanized sheet steel

Inlet rings for forward curved centrifugal fans

Part no.	Fan size	Vers.	a	b	c	d	e	f	r	u
09560-2-4013	085 ⁽¹⁾	1	92.0	63.4	84.0	6.0	3x4.2	0.80	6.8	—
09563-2-4013	097 ⁽¹⁾	1	116.0	80.0	108.0	10.0	3x4.5	0.80	10.0	—
09566-2-4013	108	1	129.0	87.0	118.0	13.0	4x4.5	1.00	8.0	—
09569-2-4013	120	1	142.0	100.0	132.0	9.0	4x4.5	1.00	8.0	—
09572-2-4013	133	1	150.0	112.0	142.0	12.0	4x4.5	1.00	10.0	—
09576-2-4013	140 / 146	1	170.0	125.5	158.0	14.0	4x4.5	1.25	10.0	—
09588-2-4013	160	1 ⁽²⁾	185.0	130.0	175.0	17.0	4x4.5	0.75	12.0	—

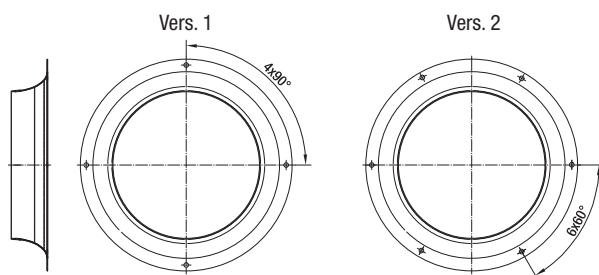
Subject to change

(1) 3 drilled holes staggered by 120°

(2) only for 09588-2-4013

Inlet rings / air filter

For centrifugal fans

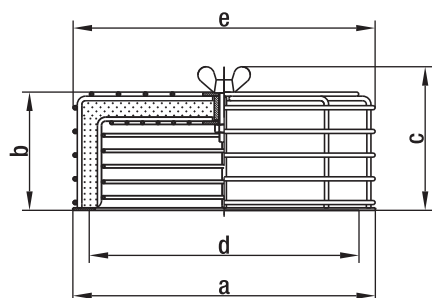


Material: Galvanized sheet steel

Inlet rings without measuring device for backward curved centrifugal fans

Part no.	Fan size	Vers.	Dimensions
09576-2-4013	190	1	See corresponding product page
09609-2-4013	220	2	See corresponding product page
96358-2-4013	225	1	See corresponding product page
96359-2-4013	250	1	See corresponding product page
28000-2-4013	280	1	See corresponding product page
31000-2-4013	310	1	See corresponding product page

Subject to change



- **Material:** Steel wire or sheet steel, plastic coated in RAL no. 9005, black
- **Filter:** Viledon filter type R: PSB / 29 OS (according to DIN 24185)
Separation capacity: < 86%
Efficiency: < 20%
Dust binding capacity: 650 g/m²

Air filters for centrifugal blowers (with die-cast aluminum housing)

Part no.	Fan size	a	b	c	d	e	Replacement filter
95777-1-5171	108 / 120	142.0	66.0	83.0	118-132	145.0	95779-1-5171
95778-1-5171	140 / 146 / 160	185.0	74.0	91.0	158-175	185.0	95780-1-5171

Subject to change

Cables

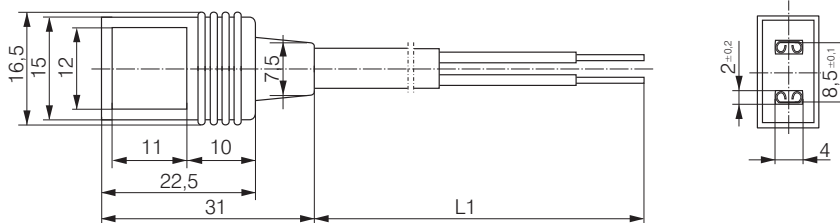
- Cable with molded plug connection in varying lengths.
- Wire end with wire end ferrules, crimped ferrules, or tin-plated.
- Straight or angled plug.
- For all fan types with flat plug 2.8 / 3.0 x 0.5.



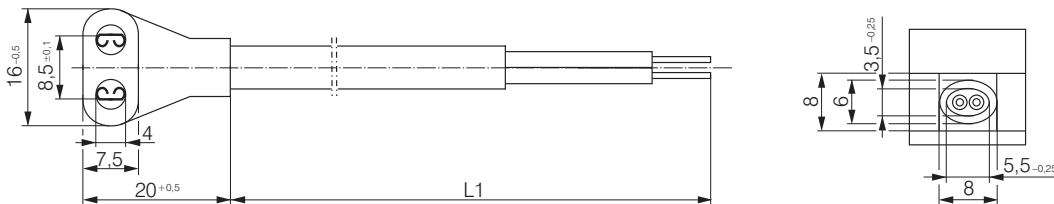
Part no.	L1 (mm)	Wires	Plug	Wire end	Flat push-on receptacle	Application
LZ120	610	0.5 mm ²	G	C	2.8 x 0.5	AC
LZ120-4	2 000	0.5 mm ²	G	A	2.8 x 0.5	AC
LZ120-5	380	0.5 mm ²	W	B	2.8 x 0.5	DC
LZ120-6	610	0.5 mm ²	W	B	2.8 x 0.5	DC
LZ120-11	2 000	0.5 mm ²	G	A	2.8 x 0.5	DC
LZ120-16	800	0.5 mm ²	G	B	2.8 x 0.5	AC
LZ120-18	4 000	0.5 mm ²	G	A	2.8 x 0.5	AC
LZ126	1 000	0.5 mm ²	G	C	2.8 x 0.5	AC
LZ127	1 600	0.5 mm ²	G	B	2.8 x 0.5	AC
LZ130-1	610	0.82 mm ²	G	C	2.8 x 0.5	AC *
LZ140	610	0.73 mm ²	G	B	2.8 x 0.8	AC

* UL-approved

Cable **Straight plug (G)**

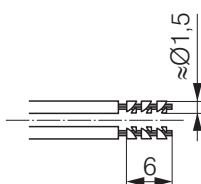


Cable **Angled plug (W)**



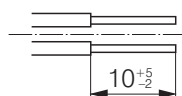
Wire end ferrules

Wire end A



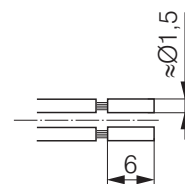
Tin-plated

Wire end B

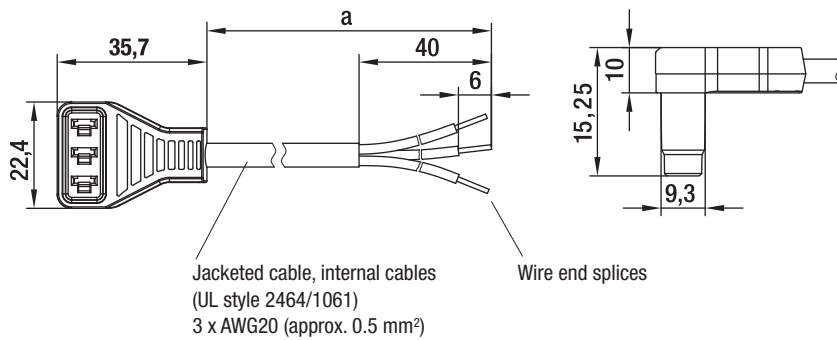


Wire end ferrules

Wire end C



Cable (ESM) / Handheld Programmer



- **Design:** Cable conforms to UL standards sealed plug. Customized cables on request.

Cables for energy-saving motors 115/230 VAC

Part no.	a
13060-4-1040	450
13061-4-1040	1500
Subject to change	



- Easy speed programming
- Battery operated
- User-friendly navigation menu
- Protective cover with folding stand

For Energy Saving Motor (ESM) based products

Part no.

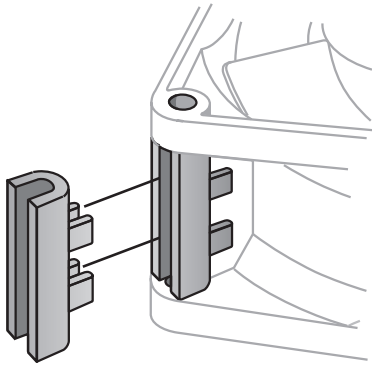
CBC 000-AF08-01

Subject to change

Makes quick work of programming the two ESM adjustable operating speeds. Eliminates the need for a PC, software adapter and second cable. Especially for use in production or by sales representatives. Automatic shut-off function for extended battery life. Mini USB plug for downloading software updates. Batteries, programming cable, and operating instructions included in scope of delivery.

Accessories

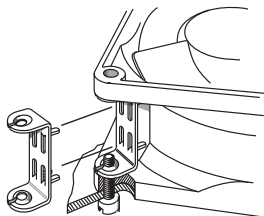
In addition to the accessories and installation parts listed here, ebm-papst also supplies a number of additional, sometimes very special parts for fans. Our company sales team is happy to offer you their expert assistance with all your questions regarding the installation and use of our fans.



Fan series	Part no.
8300	LZ212 / LZ260
8400 N	LZ261
3400 N	LZ261
9000	LZ210
4000	LZ210
4300	LZ212 / LZ260

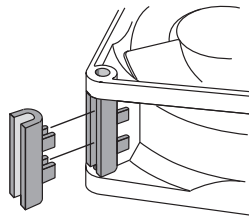
Fan series	Part no.
5100	LZ210
5600	LZ210
5200	LZ210
5900	LZ210
7000	LZ210
VARIOFAN	LZ370

LZ212



Screw clip of rustproof spring steel.
For mounting fans with threaded pin
3.5 DIN EN ISO 1478 (7970).

LZ260/LZ261



Spacer of fiberglass-reinforced plastic.
For mounting with screws through both fan
mounting flanges.

LZ210



Screw clip of hardened steel.
For mounting fans with threaded pin 6-32 UNC
or 3.5 DIN 7970.

LZ370

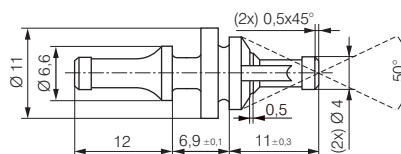


Required performance data:

R_{25}	= 100 K Ω $\pm$ 5% @25°C
B-value	= 4190 $\pm$ 2%
P_{max}	= 0,25 W

Temperature sensor for speed-controlled fan
operation. Temperature range 30...50 °C.

LZ550

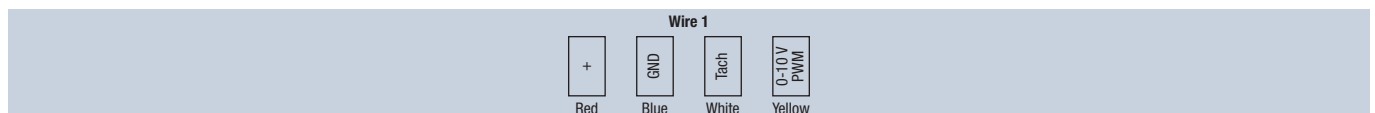
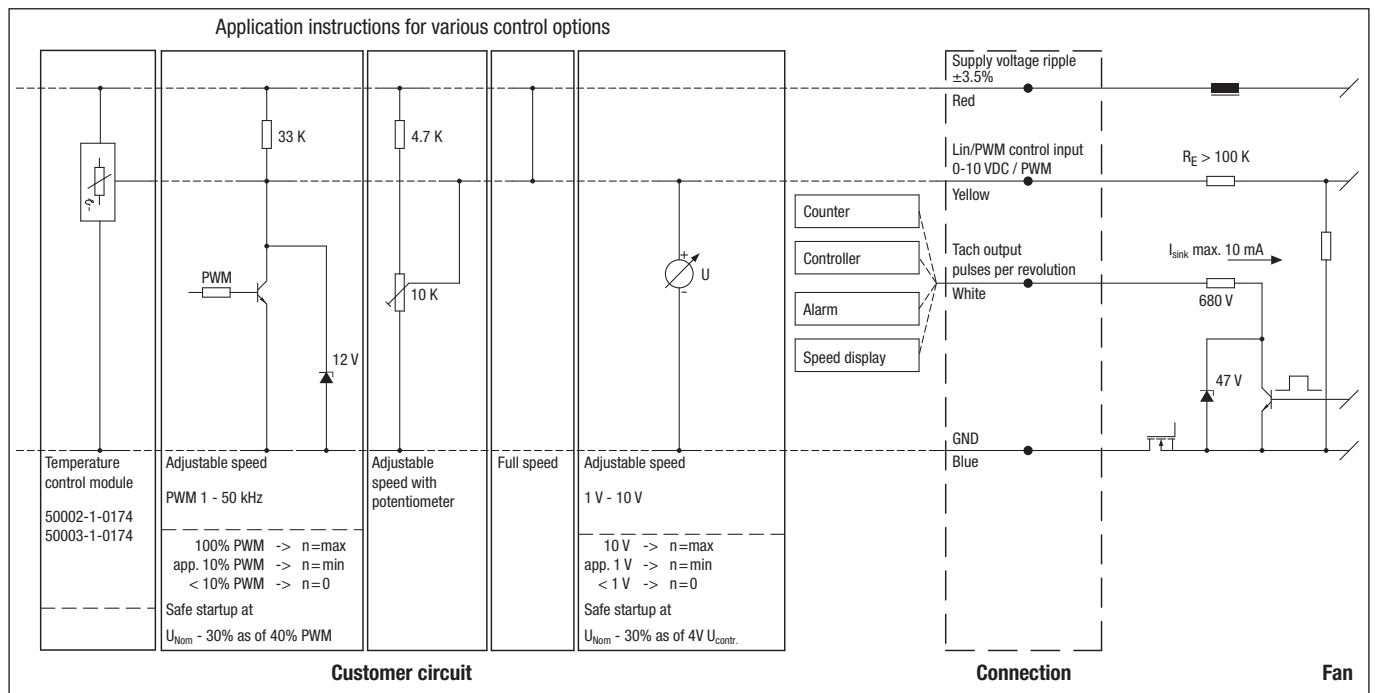


Rubber anti-vibration mounts
for fans with a hole $\varnothing$ of 4.3 $\pm$ 0.2 mm and
flange thickness of 3 to 5.5 mm.
For a carrier plate with a hole $\varnothing$ of 6.5 $\pm$ 0.15
mm and plate thickness of 1 to 2 mm.

Connection diagrams EC E)

Technical features (nominal voltage 24 / 48 VDC):

- Control input 0-10 VDC / PWM
- Tach output
- Reverse polarity and locked-rotor protection
- Motor current limitation
- Voltage-dependent derating
- Thermal overload protection electronics
- Soft startup

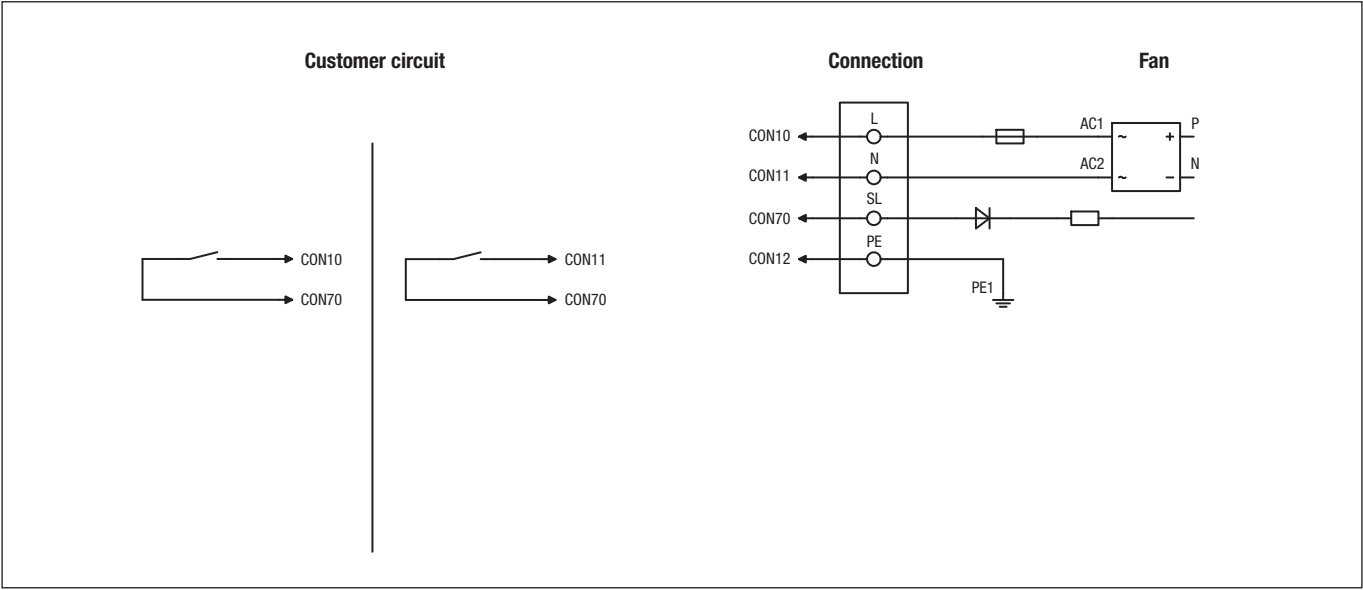


Wire	Connection	Color	Assignment/function	Wire	Connection	Color	Assignment/function
1	+	Red	Supply voltage ripple $\pm 3.5\%$	1	Tach	White	Tach output:
	GND	Blue	GND		0-10 V / PWM	Yellow	Control input

Connection diagrams EC H3)

Technical features (M3G 055 with 2 speed stages):

- Speed setting input (230V)
- Thermal overload protection electronics / motor
- Motor current limitation
- Locked-rotor protection
- Soft startup

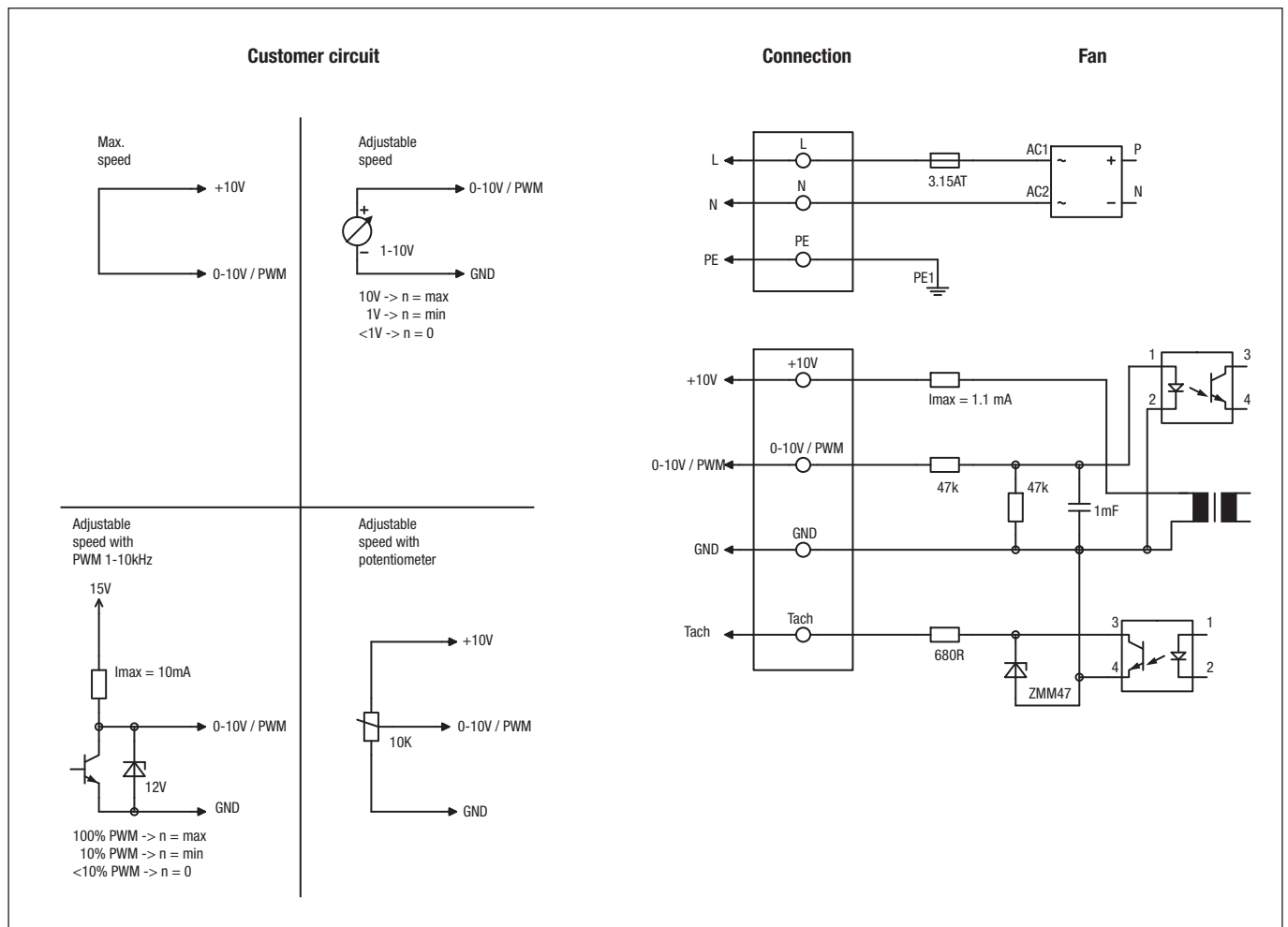


Wire	Connection	Color	Function / assignment
CON10	L	Black	Power supply 230 VAC, 50 - 60 Hz, see type plate for voltage range
CON11	N	Blue	Neutral conductor
CON12	PE	Green/yellow	Ground conductor
CON70	SL	brown	Speed selection: switch open = speed 1; switch closed = speed 2

Connection diagrams EC H4)

Technical features (M3G 055 speed-controlled):

- Output 10 VDC Max. 1.1 mA
- Tach output
- Thermal overload protection electronics / motor
- Motor current limitation
- Soft startup
- Locked-rotor protection
- Control input 0-10 VDC / PWM
- Control interface with SELV potential safely disconnected from the mains



Connection	Color	Function / assignment
L	Black	Power supply 115/230 VAC, 50 - 60 Hz, see type plate for voltage range
N	Blue	Neutral conductor
PE	Green/yellow	Ground conductor
+10V/max.1.1mA	Red	Voltage output +10 V / 1.1 mA, electrically isolated, not short-circuit-proof
Tach	White	Tach output: Open collector, 1 pulse per revolution, electrically isolated
0-10V / PWM	Yellow	Control input 0-10 V or PWM, electrically isolated
GND	Blue	GND - Connection for control interface

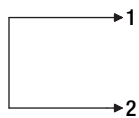
Connection diagrams EC J5)

Technical features (nominal voltage 24 / 48 VDC):

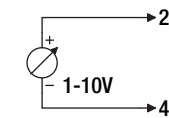
- Control input 0-10 VDC / PWM
- Tach output
- Reverse polarity and locked-rotor protection
- Motor current limitation
- Line undervoltage detection
- Soft startup

Application instructions for various control options

max.
speed

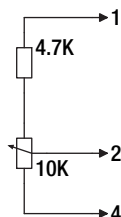


Speed setting

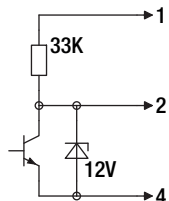


10V -> n = max
1V -> n = min
<1V -> n = 0
safe start-up at
Unom -30%
as of 4V Ucontr.

Speed setting with
potentiometer

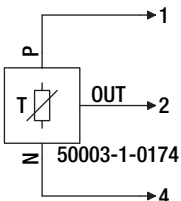


Speed setting with
PWM 1-10kHz

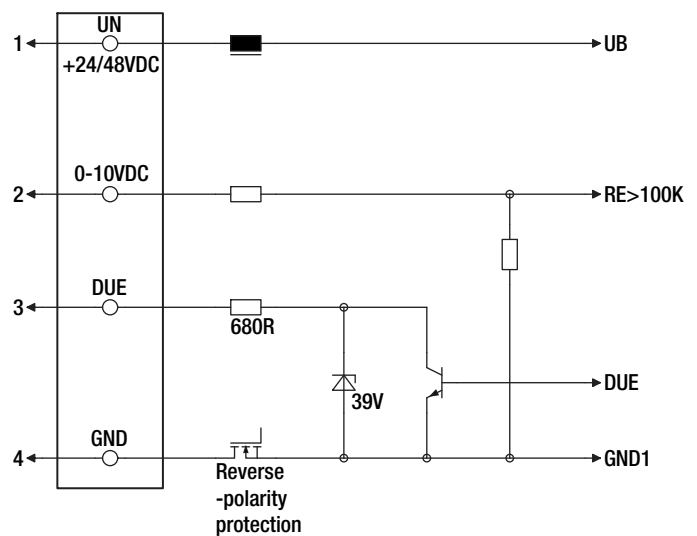


100% PWM -> n = max
10% PWM -> n = min
<10% PWM -> n = 0
safe start-up at
Unom -30%
as of 40% PWM

Setting of values via
temperature controller



T < 10°C -> n = 0
T > 45°C -> n = max



Customer circuit

Connection

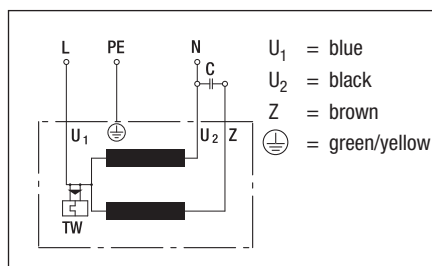
Fan

Wire	Connection	Color	Assignment/function
1	UN +24/48 VDC	Red	Power supply 24/48 VDC, supply voltage ripple $\pm 3.5\%$
2	0-10 VDC	Yellow	Control input Re >100 K
3	Tach	White	Tach output, 3 pulses per revolution, Isink max. = 10 mA
4	GND	Blue	Reference ground

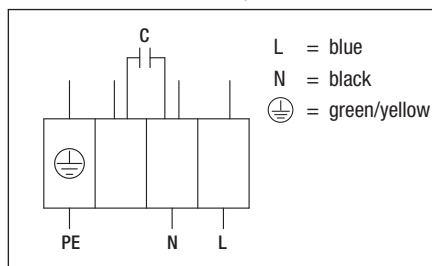
Connection diagrams AC

A1) / A3) / C2)

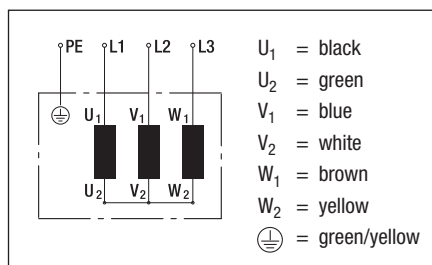
A1) Single-phase capacitor motor (1~ 115/230 VAC power line) with thermal overload protector wired internally



A3) Single-phase capacitor motor (1~ 115/230 VAC power line) with thermal overload protector wired internally

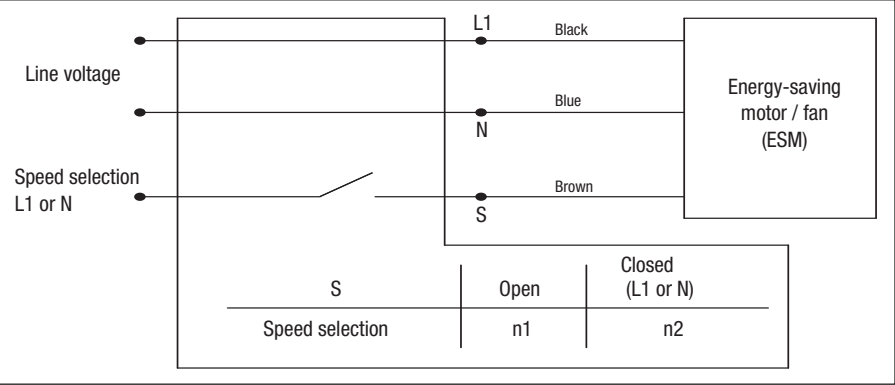


C2) Star connection (3~ 400 VAC power line) without thermal overload protector



Connection diagrams AC J7)

J7) Energy-saving motor (ESM) (1~ 115/230 VAC power line)



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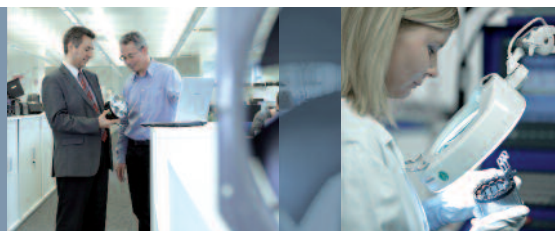
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