



Quiet and reliable output  
in compact design



The engineer's choice

**ebmpapst**

# Specialists and special solutions for state-of-the-art heating engineering

**Traditionally, heating engineering has been focus of the ebm-papst performance spectrum. For decades, our innovative motor and fan technology has contributed to making modern heating engineering more powerful, economical and environmentally friendly. Because we have been part of the ever-expanding solid fuel heater market for more than 15 years, we can not only rely on special fans for wood pellet heaters and wood chip ovens, but can also integrate exceptional application skills and knowledge.**

With fan technology specially developed for the requirements of wood pellet heaters and wood chip ovens, our goal is to provide the required air flow for all systems – whether their heating capacity is 5 kW or 200 kW, and for every conceivable operating state – and to do so quietly and economically. Even today, we offer a range of fan products tailored to the widely varying oven sizes in tried-and-tested AC & EC technology: fans for both intake and exhaust air.

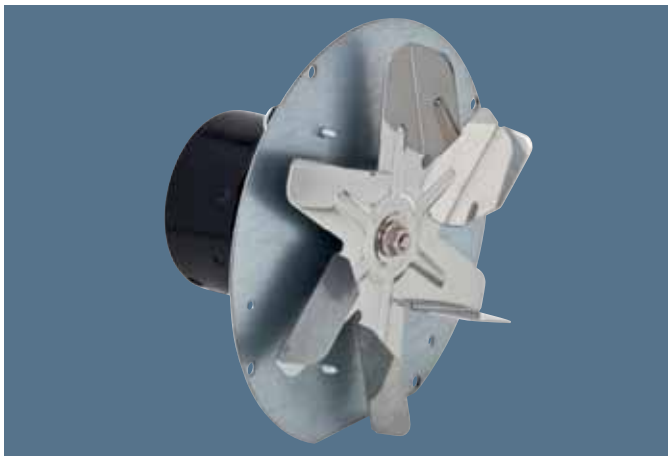
We gladly take advantage of opportunities to integrate our application skills and knowledge, as well as our experience in high-temperature applications, into the development of new devices and systems at an early stage. One of the ways we help is to make our measurement laboratory available to our customers so that they can optimize specific application designs in the ovens. This guarantees the best possible fulfillment of the stringent requirements for temperature stability and noise with fan technology that is perfectly suited to the application.

## **High performance in a small space**

The tight space of the ovens is another challenge we constantly strive to master. Every application should embody the ideal combination of size, output and cost-effectiveness. Our highly compact fan motors, with their external rotor design, offer the best possible conditions. The design differs from that of conventional electric motors – the stator is inside, the rotor outside. Thus the external rotor-motor and the fan form a unit that is not only compact and space-saving, but also durable and robust.



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# The entire product range from a single source



## **Fans for intake air**

Used as primary or secondary intake air fans, ebmpapst AC & EC centrifugal blowers shine with their quiet and economical performance. The blowers can be equipped with an optional tach output for exact control according to the operating mode.

Of course, ebmpapst products always designed for an uncompromising level of stability and durability. For example, the scroll housing of the ebmpapst centrifugal blower is made of robust die-cast aluminium, and the impeller is made of hot-galvanized sheet steel.

## **Fans for exhaust air**

Exhaust air is carried away by ebmpapst induced draft blowers: single inlet AC centrifugal fans. With our extensive experience in high-temperature bearing technology and the aerodynamic skills and knowledge gained from being the market leader, we can meet the most stringent demands of this application area for service life, noise and cost-effectiveness.

The type of construction itself guarantees exceptional cooling performance – which is improved even further by the flow-optimized cooling blades that provide additional motor cooling. The impellers of our centrifugal fans are made of corrosion-resistant stainless steel.

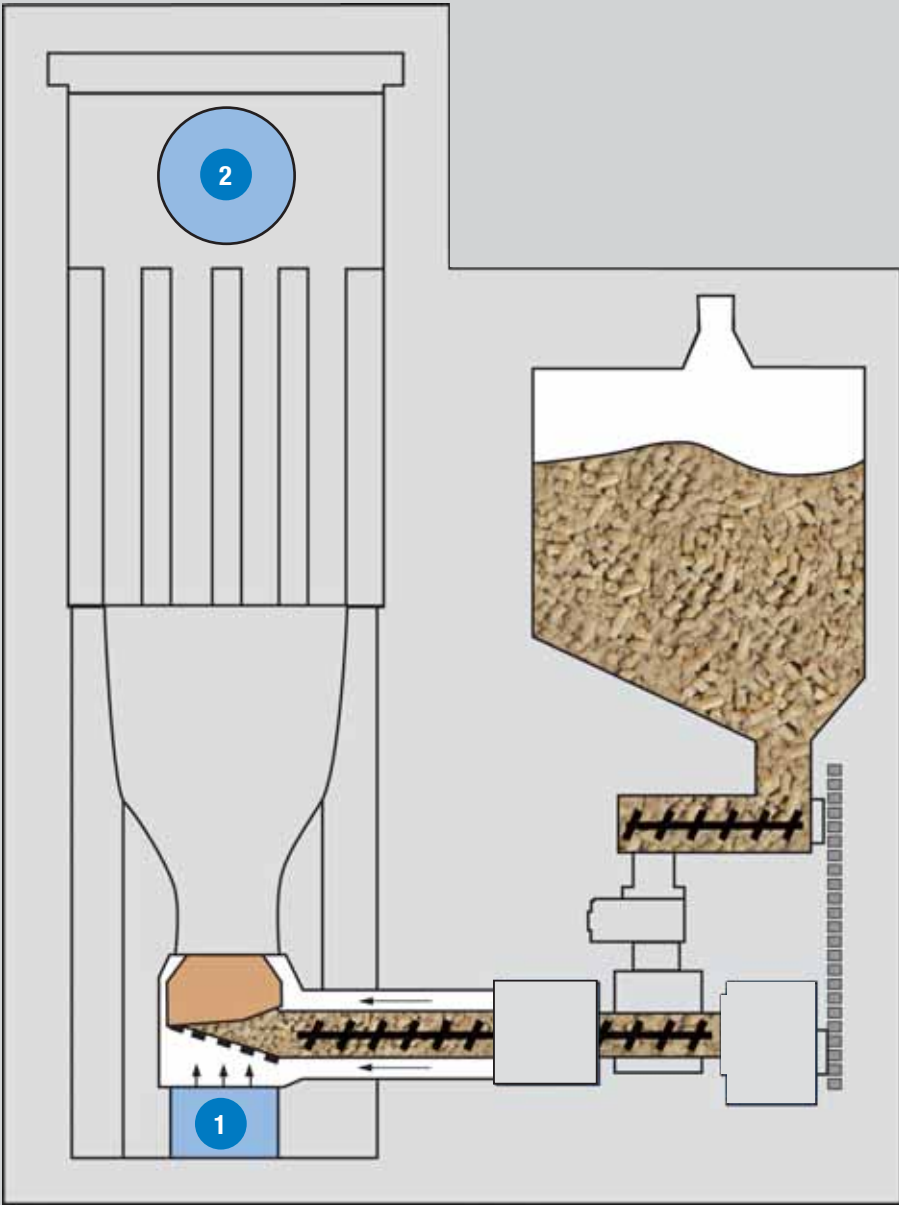
Solid fuel heater manufacturers can count on ebm-papst for complete solutions from a single source. Our product range for wood pellet heaters and wood chip ovens includes intake air fans and customized exhaust air fans for exhaust gas discharge.



Intake air blower

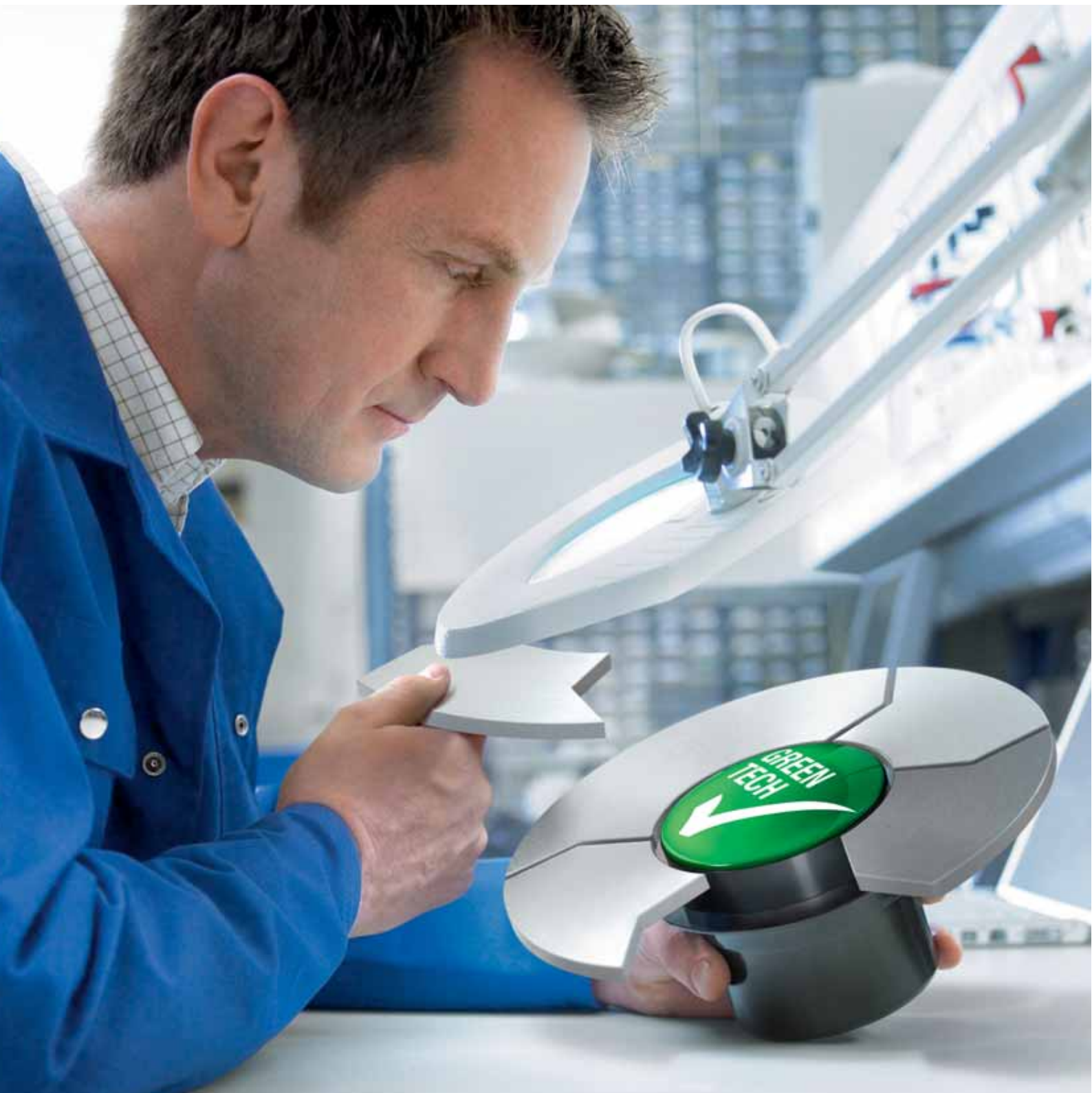


Exhaust air fans



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 co-operation 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 eco-friendly 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 future-oriented EC technology from ebmpapst. 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 ebmpapst products – even those for which GreenTech EC technology does not (yet) make sense from an application viewpoint – feature the greatest possible connection of economy and ecology.

# AC centrifugal blower (fresh air)

single inlet, Ø 108



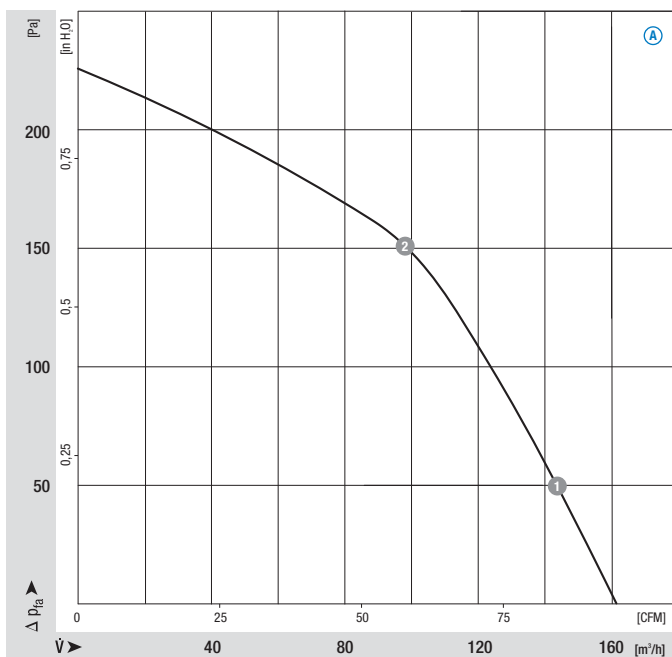
- **Material:** Housing: Die-cast aluminium  
Impeller: Galvanised sheet steel  
Rotor: Partially cast in aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage VAC	Frequency Hz	Air flow m <sup>3</sup> /h	Speed/rpm	Power input W	Current draw A	Capacitor µF/VDB	Sound pressure level dB(A)	Min. backpressure Pa	Perm. amb. temp. °C	Mass kg	Electr. connection p. 40
G2E 108-AG63 -01	M2E 052-BF	Ⓐ	230	50	160	1850	30	0,14	1,0 / 400	56	0	-25..+85	1,3	A1)

subject to alterations

## Curves



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

Suction-side noise levels: LW<sub>A</sub> as per ISO 13347, Lp<sub>A</sub> measured at 1 m distance to fan axis

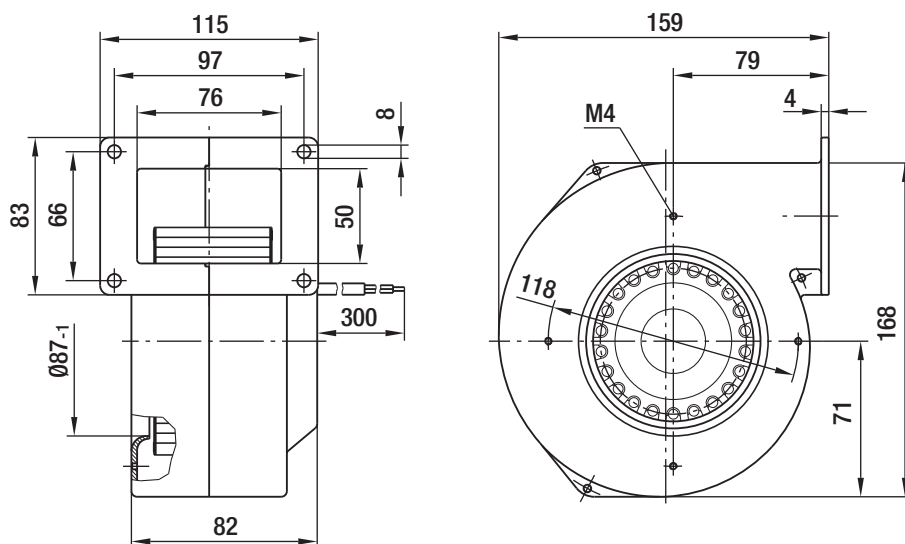
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

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 42 ff.

n [rpm]	P <sub>1</sub> [W]	I [A]
2050	28	0,12
2400	24	0,11

- **Motor protection:** TOP wired internally
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC



# AC centrifugal blower (fresh air)

single inlet, Ø 120



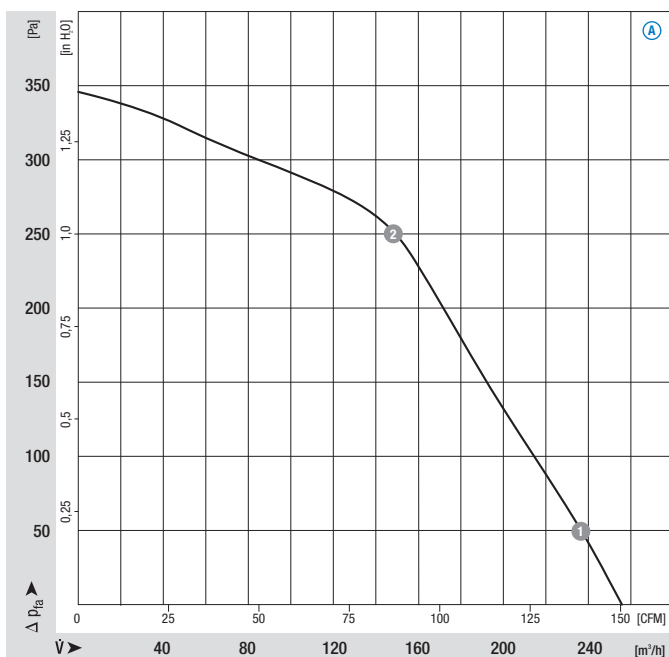
- **Material:** Housing: Die-cast aluminium  
Impeller: Galvanised sheet steel  
Rotor: Partially cast in aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
			VAC	Hz	m <sup>3</sup> /h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40
G2E 120-AR77 -01	M2E 068-BF	Ⓐ	230	50	255	2350	80	0,35	2,0 / 450	61	0	-25..+55	1,8	A1)

subject to alterations

## Curves



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

Suction-side noise levels: LW<sub>A</sub> as per ISO 13347, Lp<sub>A</sub> 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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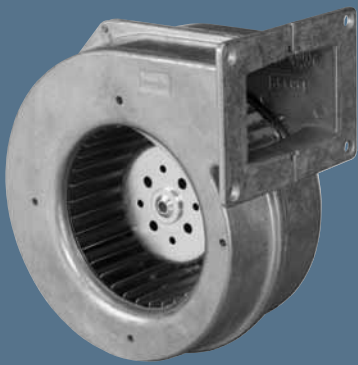
For detailed information see page 42 ff.

	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	2460	77	0,34
Ⓐ 2	2665	69	0,31



# EC centrifugal blower (fresh air)

single inlet, Ø 120

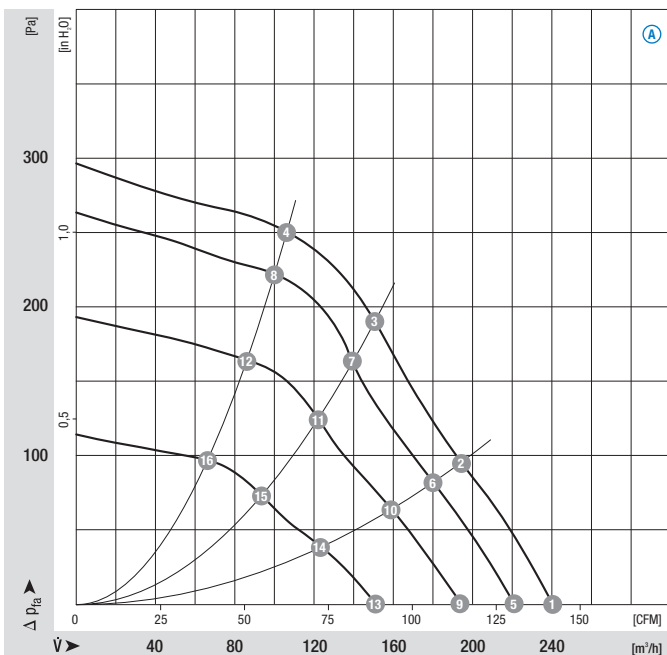


- **Material:** Housing: Die-cast aluminium  
Impeller: Hot-dip galvanised sheet steel  
Rotor: Galvanised  
Electronics enclosure: Die-cast aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nenndaten		Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Max. Power input <sup>(1)</sup>	Max. Current draw <sup>(1)</sup>	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
Type	Motor	VAC	Hz	m <sup>3</sup> /h	rpm	W	A	dB(A)	Pa	°C	kg	p. 41	
<b>G3G 120-BB03 -02</b>	M3G055-BD	Ⓐ	1~230	50/60	240	2200	41	0,30	62	0	-25..+60	1,8	H1)

subject to alterations (1) Nominal data in operating point with maximum load and 230 VAC

## Curves



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

Suction-side noise levels: LW<sub>A</sub> as per ISO 13347, Lp<sub>A</sub> 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.

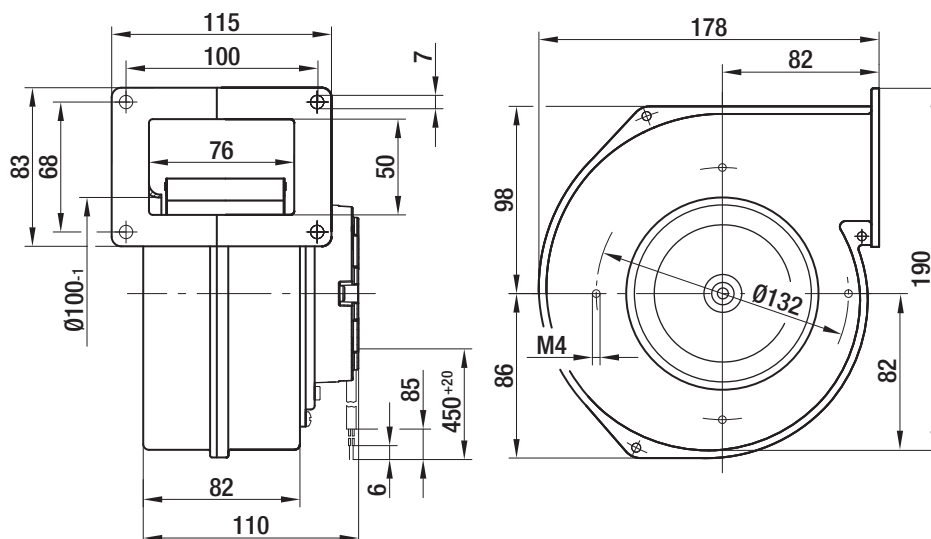
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 42 ff.

	n [rpm]	P <sub>1</sub> [W]	I [A]	Lp <sub>A</sub> [dB(A)]
Ⓐ 1	2200	41	0,30	62
Ⓐ 2	2320	34	0,25	59
Ⓐ 3	2440	28	0,20	57
Ⓐ 4	2600	20	0,15	57
Ⓐ 5	2060	34	0,25	59
Ⓐ 6	2190	29	0,20	57
Ⓐ 7	2295	24	0,20	55
Ⓐ 8	2445	18	0,15	54
Ⓐ 9	1830	24	0,20	54
Ⓐ 10	1920	20	0,15	52
Ⓐ 11	2010	17	0,15	51
Ⓐ 12	2115	13	0,10	51
Ⓐ 13	1430	13	0,10	48
Ⓐ 14	1500	12	0,10	45
Ⓐ 15	1580	10	0,10	44
Ⓐ 16	1640	8	0,10	44

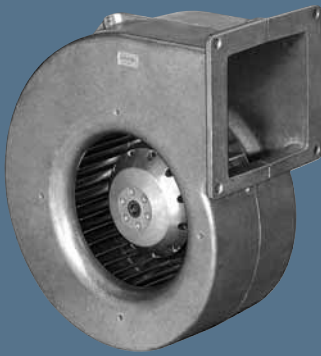
- **Technical features:**
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1.1 mA
- **EMC:** Interference emission acc. to EN 61000-6-3  
Interference immunity acc. to EN 61000-6-1  
Harmonics acc. to DIN EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 60950-1
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** GOST; VDE, UL, CSA, CCC are applied for

- Tach output
- Locked-rotor protection



# AC centrifugal blower (fresh air)

single inlet, Ø 140



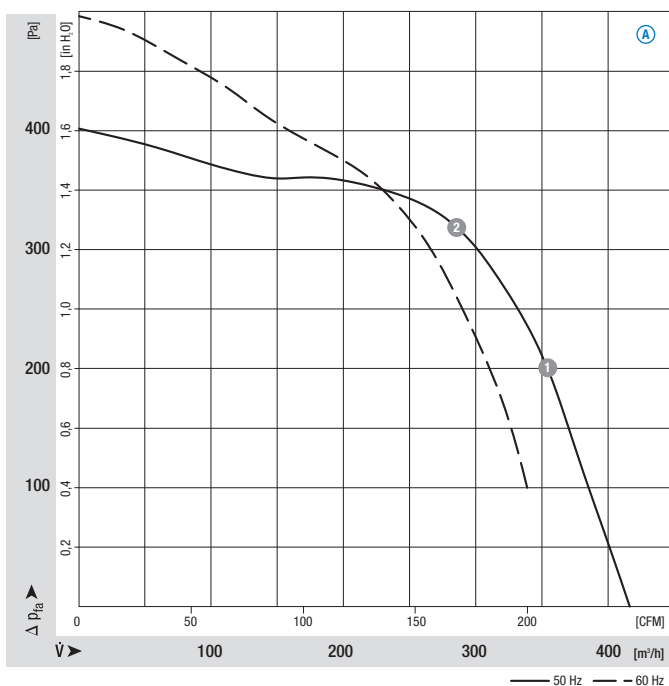
- **Material:** Housing: Die-cast aluminium  
Impeller: Galvanised sheet steel  
Rotor: Partially cast in aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
			VAC	Hz	m <sup>3</sup> /h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40
<b>G2E 140-AL40 -01</b>	M2E 068-CF	Ⓐ	1~230 1~230	50 60	415 340	1650 1700	135 145	0,60 0,64	2,0/450 2,0/450	63 60	0 100	-25..+60 -25..+40	3,0	A1)

subject to alterations

## Curves



Air performance measured as per: ISO 5801, Installation category A, in ebm-papst scroll housing 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

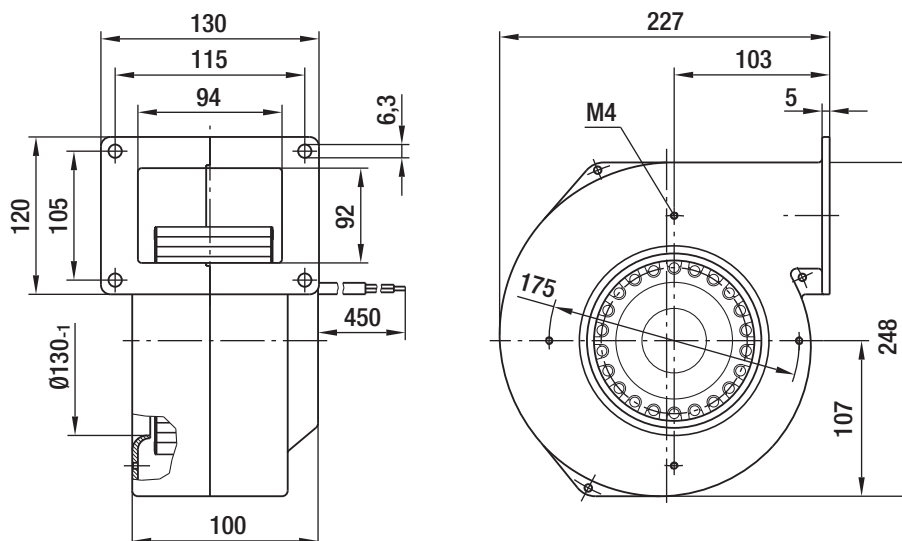
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

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 42 ff.

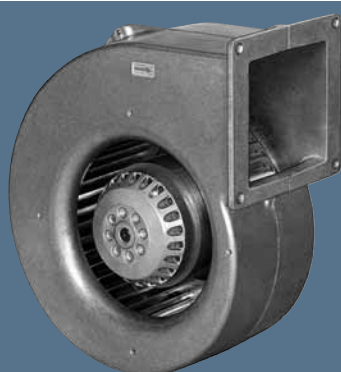
	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	2100	111	0,48
Ⓐ 2	2350	98	0,43

- **Motor protection:** TOP wired internally
- **Optional:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC, GOST



# AC centrifugal blower (fresh air)

single inlet, Ø 160



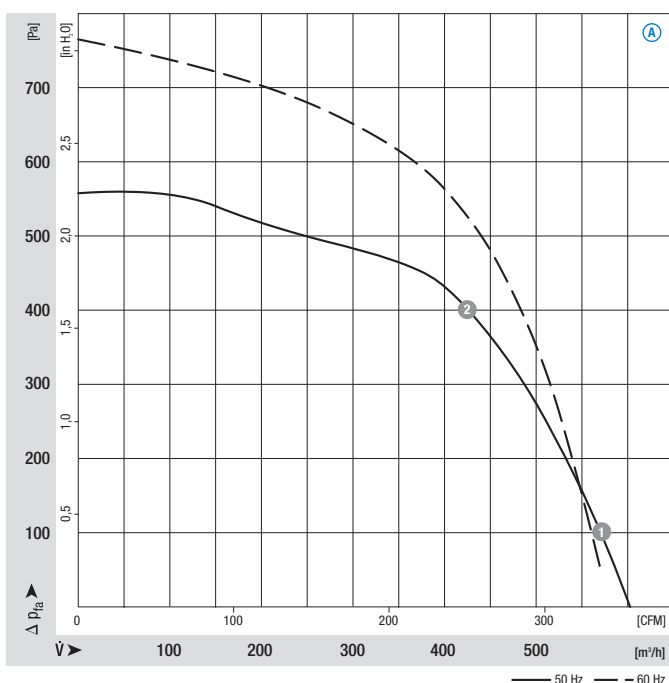
- **Material:** Housing: Die-cast aluminium  
Impeller: Galvanised sheet steel  
Rotor: Partially cast in aluminium
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
			VAC	Hz	m <sup>3</sup> /h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40
<b>G2E 160-AY47 -01</b>	M2E 068-EC	Ⓐ	1~230 1~230	50 60	600 570	2100 2100	240 280	1,05 1,23	6,0/400 6,0/400	72 71	0 50	-25..+50 -25..+40	3,9	A1)

subject to alterations

## Curves



Air performance measured as per: ISO 5801, Installation category A, in ebm-papst scroll housing 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.

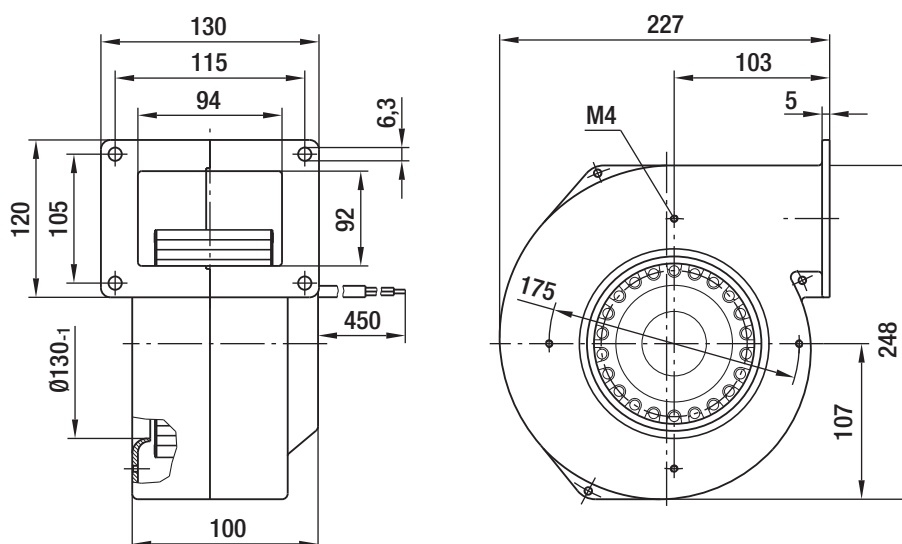
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 42 ff.

	n [rpm]	P <sub>1</sub> [W]	I [A]
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Ⓐ 1	2210	223	0,98
Ⓐ 2	2525	172	0,76

- **Motor protection:** TOP wired internally
- **Optional:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC



# AC radial fan (exhaust air)

single inlet, Ø 150

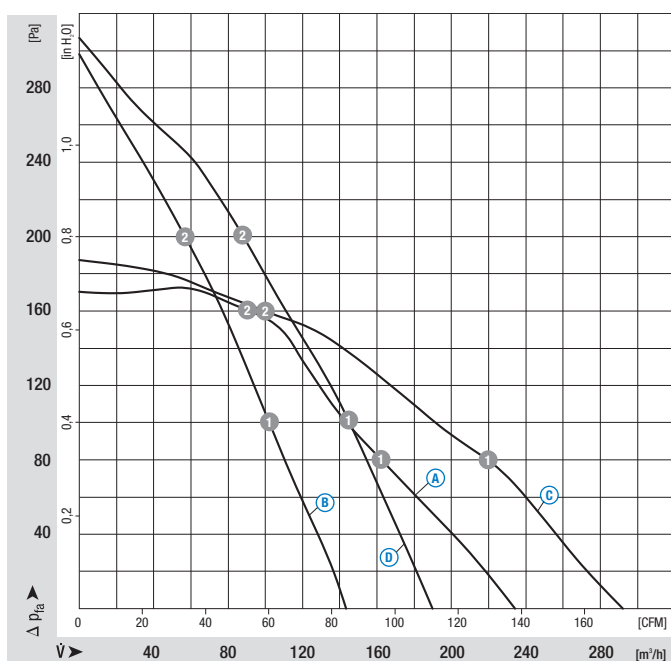


- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nenndaten		Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
Type	Motor	VAC	Hz	m³/h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40	
R2E 150-AN91 -**	M2E 068-BF	Ⓐ	230	50	235	2400	32	0,14	1,0 / 400	62	0	-25..+100	1,6	A1)
		Ⓑ	230	50	145	2445	30	0,13	1,0 / 400	61	0	-25..+100	1,6	A1)
R2E 150-AH26 -**	M2E 068-BF	Ⓒ	230	50	290	2480	51	0,23	1,5 / 400	64	0	-25..+65	1,7	A1)
		Ⓓ	230	50	190	2655	44	0,20	1,5 / 400	63	0	-25..+65	1,7	A1)

subject to alterations      Ⓐ Ⓒ measured without scroll housing      Ⓑ Ⓓ measured in ebm-papst scroll housing

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing 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 42 ff.

	n [rpm]	$P_1$ [W]	I [A]
Ⓐ 1	2380	31	0,14
Ⓐ 2	2530	29	0,13
Ⓑ 1	2520	29	0,13
Ⓑ 2	2615	27	0,12
Ⓒ 1	2535	49	0,22
Ⓒ 2	2590	47	0,21
Ⓓ 1	2680	44	0,20
Ⓓ 2	2730	42	0,20

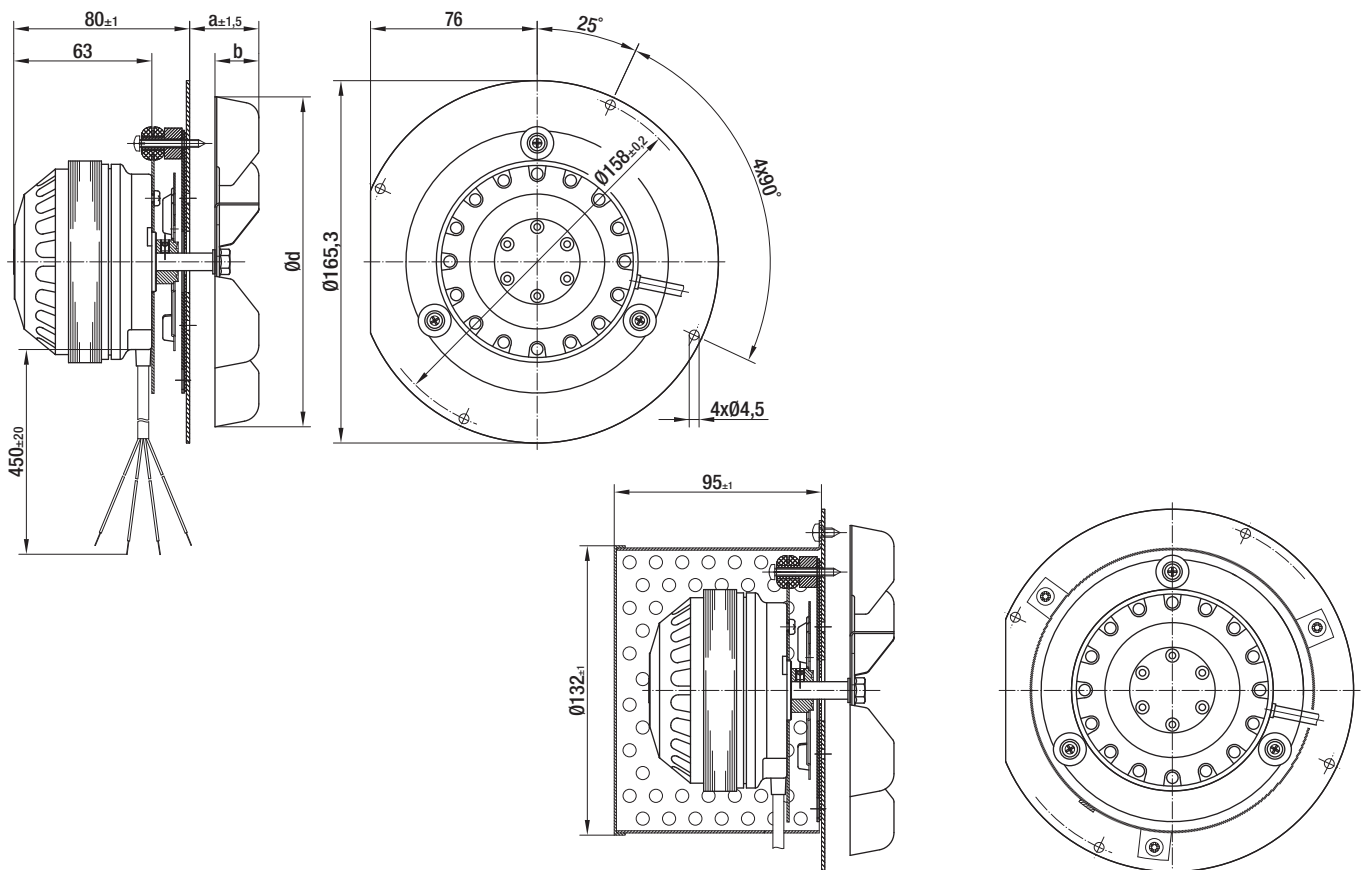
- **Motor protection:** TOP wired internally
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE



**Selection**

**Dimensions**

Type	without motor protection hood		with motor protection hood		
	a	b	d		
R2E 150-AN91 -**	31,5	20	152		
R2E 150-AH26 -**	56,5	45	148		



# AC radial fan (exhaust air)

single inlet, Ø 160

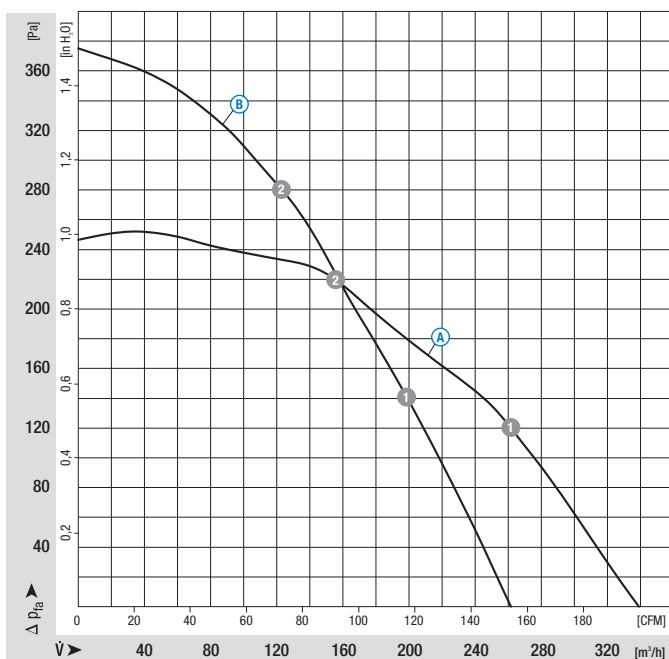


- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nenndaten		Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
Type	Motor	VAC	Hz	m³/h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40	
R2E 160-B182 -**	M2E068-CF	Ⓐ	230	50	340	2740	52	0,26	2,0 / 400	66	0	-25..+100	1,8	A1)
		Ⓑ	230	50	265	2750	50	0,23	2,0 / 400	67	0	-25..+100	1,8	A1)

subject to alterations      Ⓐ measured without scroll housing      Ⓑ measured in ebm-papst scroll housing

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing 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 42 ff.

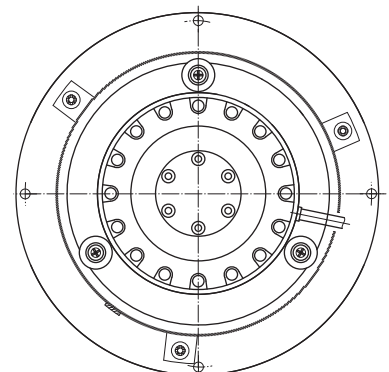
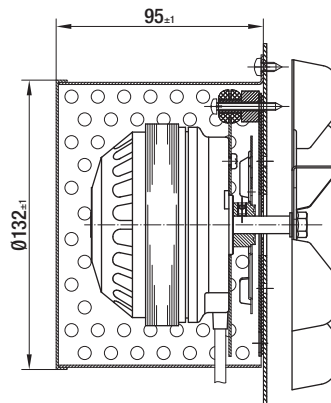
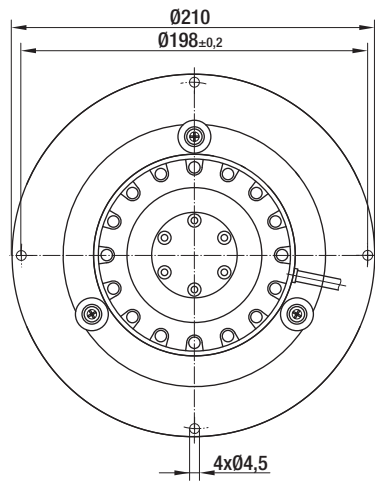
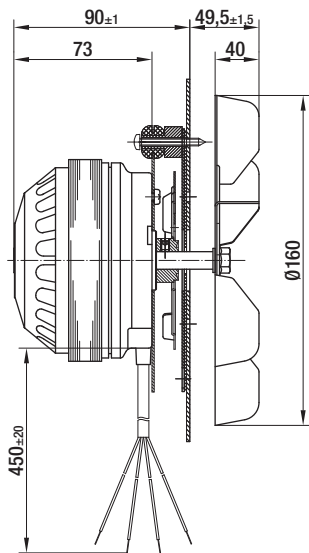
	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	2690	47	0,21
Ⓐ 2	2710	38	0,17
Ⓑ 1	2785	46	0,20
Ⓑ 2	2805	44	0,19

- **Motor protection:** TOP wired internally
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE
- **Approvals:** CCC



**Selection**

Type	without motor protection hood	with motor protection hood
R2E 160-BI82 -**	R2E 160-BI82 -01	R2E 160-BI82 -05



# AC radial fan (exhaust air)

single inlet, Ø 180



- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nenndaten

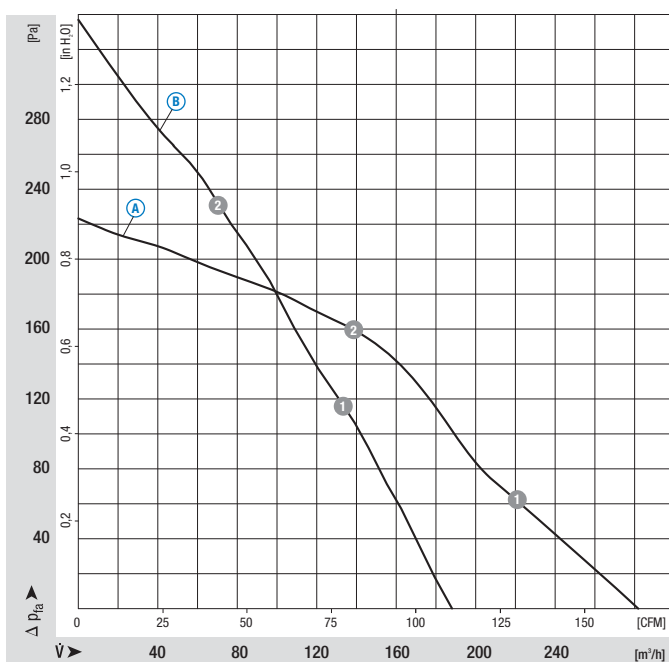
Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
Type	Motor		VAC	Hz	m³/h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40
R2E 180-CF91 -**	M2E068-BF	Ⓐ	230	50	280	1910	37	0,16	1,0 / 400	58	0	-25..+100	1,9	A1)
		Ⓑ	230	50	190	2085	35	0,15	1,0 / 400	59	0	-25..+100	1,9	A1)

subject to alterations

Ⓐ measured without scroll housing

Ⓑ measured in ebm-papst scroll housing

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing 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 42 ff.

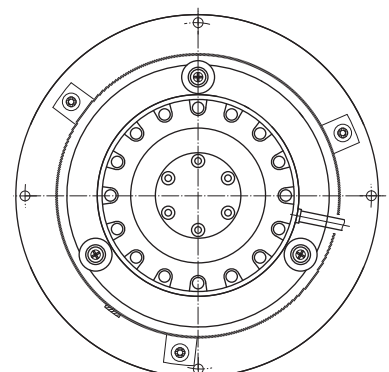
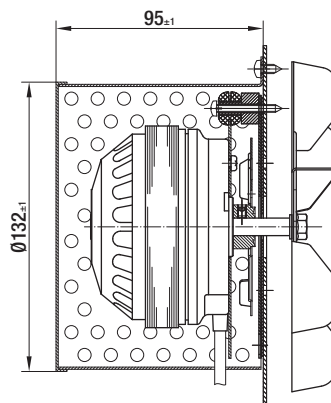
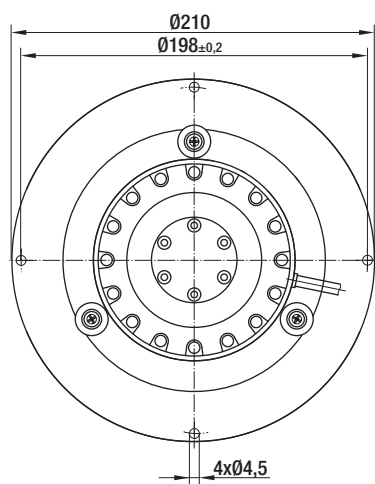
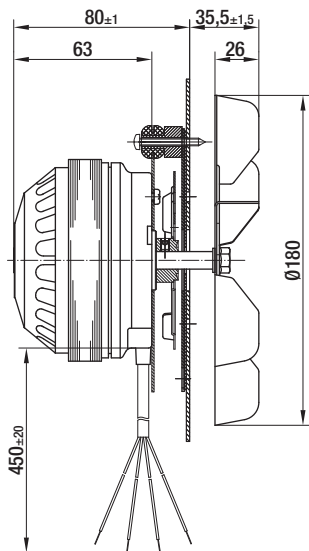
	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	1910	37	0,16
Ⓐ 2	2180	34	0,15
Ⓑ 1	2250	33	0,15
Ⓑ 2	2430	31	0,14

- **Motor protection:** TOP wired internally
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE



Selection

Type	without motor protection hood	with motor protection hood
R2E 180-CF91 -**	R2E 180-CF91 -01	R2E 180-CF91 -05



# AC radial fan (exhaust air)

single inlet, Ø 180

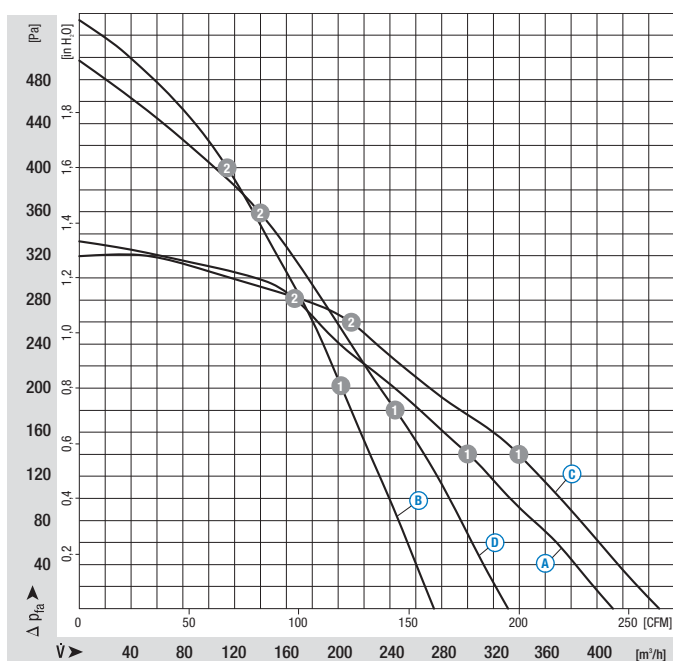


- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nenndaten		Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
Type	Motor	VAC	Hz	m³/h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40	
R2E 180-CQ82 -**	M2E 068-CF	Ⓐ	230	50	410	2545	68	0,30	2,0 / 400	65	0	-25..+100	2,1	A1)
		Ⓑ	230	50	270	2610	62	0,28	2,0 / 400	66	0	-25..+100	2,1	A1)
R2E 180-CG82 -**	M2E 068-CF	Ⓒ	230	50	450	2540	71	0,34	2,0 / 400	67	0	-25..+85	2,3	A1)
		Ⓓ	230	50	330	2580	67	0,29	2,0 / 400	68	0	-25..+85	2,3	A1)

subject to alterations      Ⓐ Ⓒ measured without scroll housing      Ⓑ Ⓓ measured in ebm-papst scroll housing

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing 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 42 ff.

	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	2545	67	0,30
Ⓐ 2	2680	55	0,24
Ⓑ 1	2700	65	0,29
Ⓑ 2	2775	58	0,26
Ⓒ 1	2515	68	0,30
Ⓒ 2	2595	61	0,27
Ⓓ 1	2625	62	0,27
Ⓓ 2	2715	54	0,24

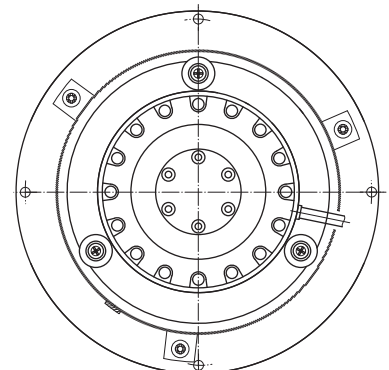
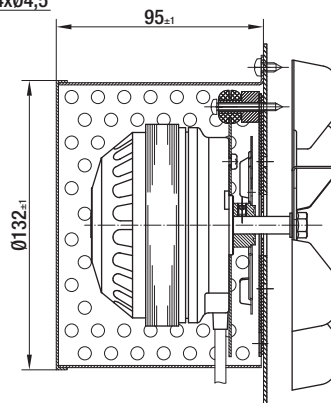
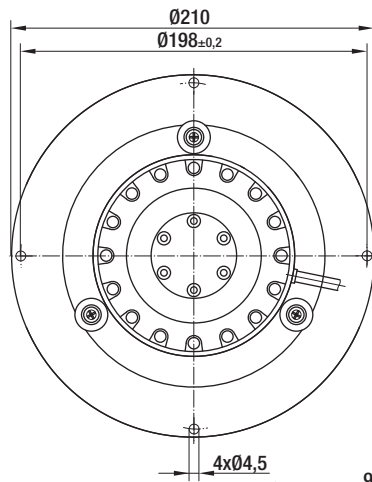
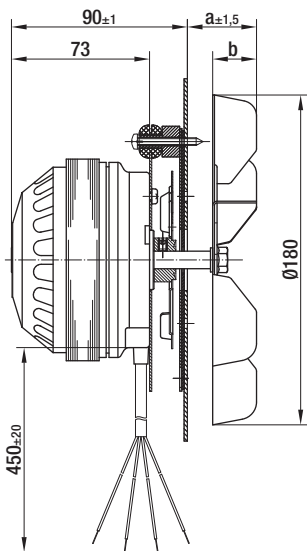
- **Motor protection:** TOP wired internally
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE



**Selection**

**Dimensions**

Type	without motor protection hood	with motor protection hood	a	b
R2E 180-CQ82 -**	R2E 180-CQ82 -01	R2E 180-CQ82 -05	44,5	35
R2E 180-CG82 -**	R2E 180-CG82 -01	R2E 180-CG82 -05	54,5	45



# AC radial fan (exhaust air)

single inlet, Ø 210

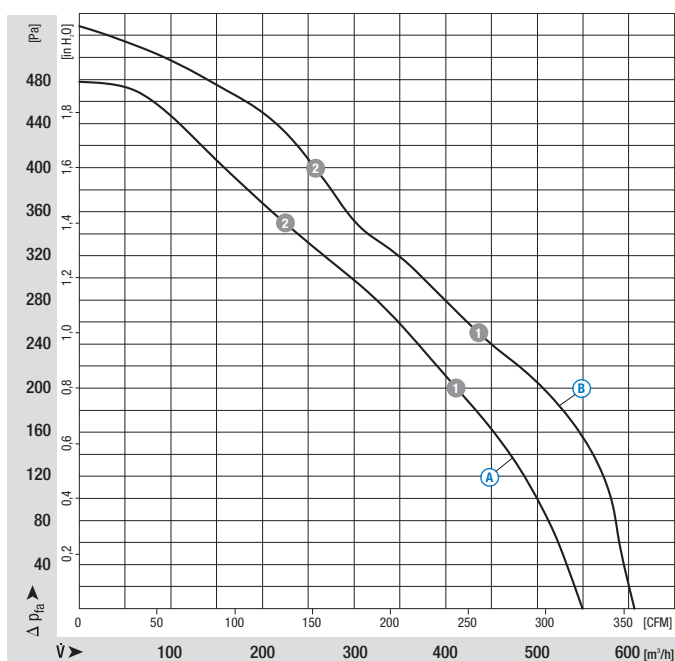


- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nenndaten		Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
Type	Motor	VAC	Hz	m³/h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40	
R2E 210-AA34 -**	M2E 068-DF	A	230	50	550	2550	100	0,45	2,0 / 450	64	0	-25..+90	2,9	A1)
R2E 210-AB34 -**	M2E 068-DF	B	230	50	605	2600	120	0,60	2,5 / 400	69	0	-25..+75	3,1	A1)

subject to alterations A B measured without scroll housing

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing

	n [rpm]	P <sub>1</sub> [W]	I [A]
A 1	2540	99	0,43
A 2	2660	83	0,36
B 1	2565	126	0,58
B 2	2625	112	0,53

Suction-side noise levels: LW<sub>A</sub> as per ISO 13347, Lp<sub>A</sub> 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 42 ff.

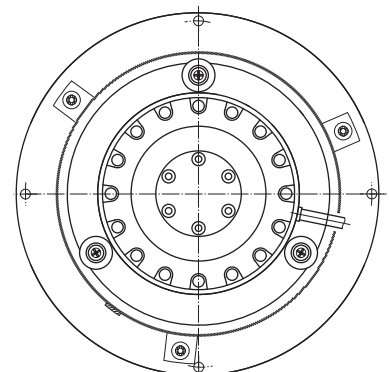
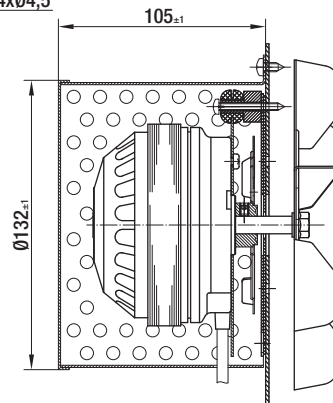
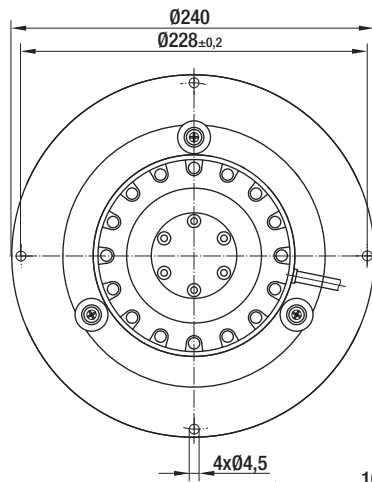
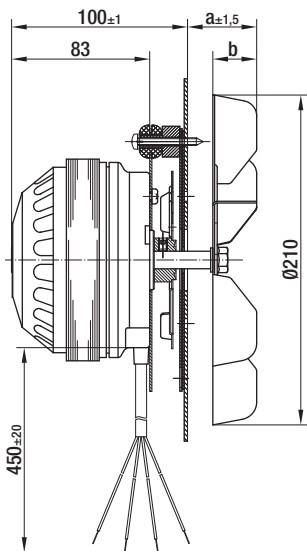
- **Motor protection:** TOP wired internally
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE



**Selection**

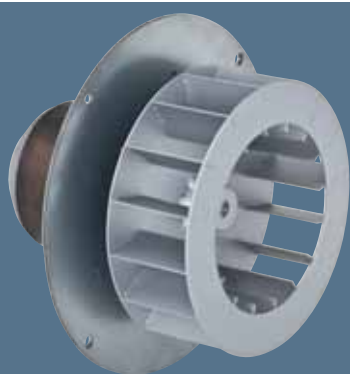
**Dimensions**

Type	without motor protection hood	with motor protection hood	a	b
R2E 210-AA34 -**	R2E 210-AA34 -01	R2E 210-AA34 -05	39,5	30
R2E 210-AB34 -**	R2E 210-AB34 -01	R2E 210-AB34 -05	54,5	45



# AC radial fan (exhaust air)

Special designs, Ø 150 / Ø 160



- **Material:** Impeller made of sheet steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 44
- **Insulation class:** "F"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

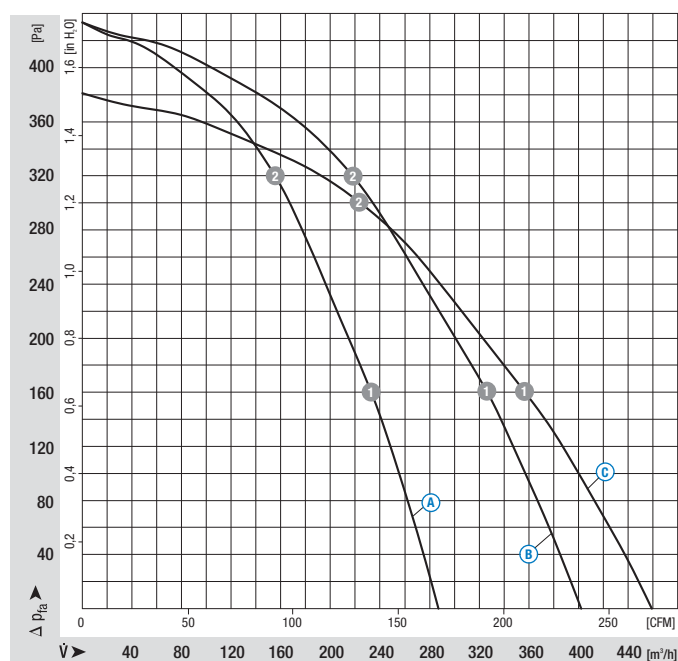
## Nenndaten

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Sound pressure level	Min. backpressure	Perm. amb. temp.	Mass	Electr. connection
Type	Motor	VAC	Hz	m <sup>3</sup> /h	rpm	W	A	µF/VDB	dB(A)	Pa	°C	kg	p. 40	
R2E 160-BG34 -**	M2E 068-DF	Ⓐ	230	50	285	2730	63	0,28	1,5 / 400	64	0	-25..+90	3,8	A1)
R2E 160-BJ52 -**	M2E 068-DF	Ⓑ	230	50	345	2880	68	0,36	3,0 / 400	70	0	-25..+85	4,0	A1)
R2E 150-BD52 -**	M2E 068-DF	Ⓒ	230	50	460	2720	107	0,50	3,0 / 400	67	0	-25..+85	4,0	A1)

subject to alterations

Ⓐ Ⓑ Ⓒ measured in scroll housing

## Curves



Air performance measured as per: ISO 5801, Installation category A, in scroll housing without protection against accidental contact

Suction-side noise levels: L<sub>WA</sub> as per ISO 13347, L<sub>pA</sub> 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 42 ff.

	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	2780	57	0,26
Ⓐ 2	2830	48	0,22
Ⓑ 1	2780	79	0,36
Ⓑ 2	2830	67	0,31
Ⓒ 1	2785	78	0,35
Ⓒ 2	2840	65	0,30

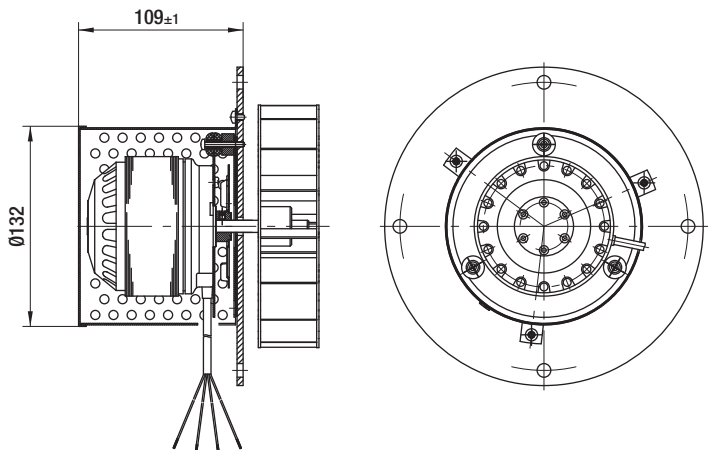
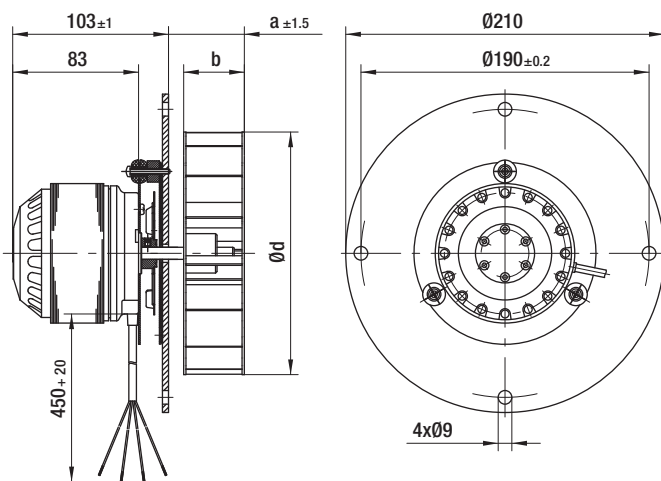
- **Motor protection:** TOP wired internally
- **Standard:** Speed monitoring via Hall IC
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1, CE



**Selection**

**Dimensions**

Type	without motor protection hood		with motor protection hood		
	a	b	a	b	d
R2E 160-BG34 -**	50,0	40	50,0	40	160
R2E 160-BJ52 -**	66,0	56	66,0	56	160
R2E 150-BD52 -**	84,0	74	84,0	74	150



# EC radial fan (exhaust air)

single inlet, Ø 150



- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 20
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage VDC	Spannungsbereich VDC	Air flow m³/h	Speed/rpm	Power input W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. <sup>1)</sup> °C	Mass kg	Electr. connection p. 40
R1G 150-AN93 -**	M1G055-BD	Ⓐ	12	8-14	260	2615	22	2,02	63	-25..+60	1,3	G)
		Ⓑ	12	8-14	160	2735	19	1,77	64	-25..+60	1,3	G)

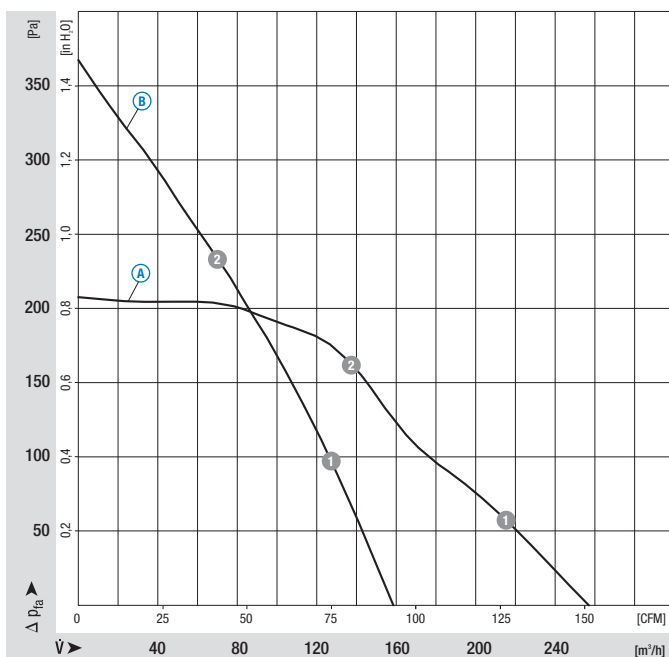
subject to alterations

Ⓐ measured without scroll housing

Ⓑ measured in ebm-papst scroll housing

<sup>1)</sup> ambient temp. necessitates technical adaption.

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing 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 42 ff.

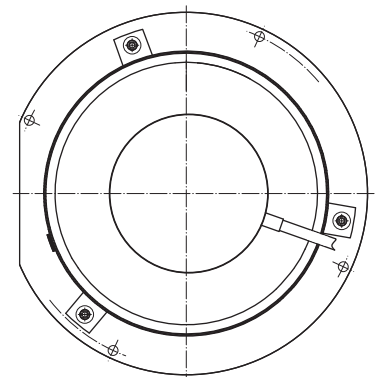
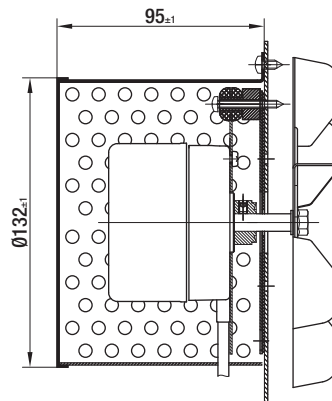
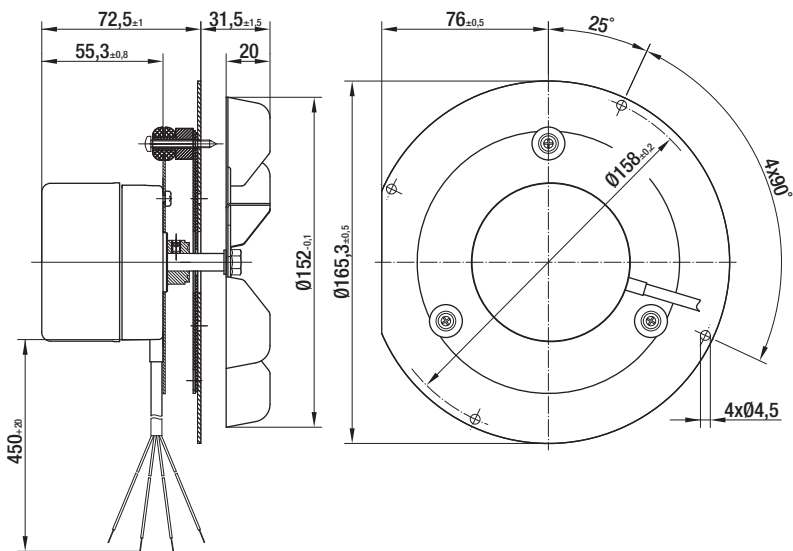
	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	2600	22	2,00
Ⓐ 2	2670	20	1,90
Ⓑ 1	2760	18	1,70
Ⓑ 2	2860	16	1,60

- **Technical features:** Control input 0-10 VDC / PWM, Tach output
- **Cable exit:** Variable

Selection



Type	without motor protection hood	with motor protection hood
R1G 150-AN93 -**	R1G 150-AN93 -02	R1G 150-AN93 -08



# EC radial fan (exhaust air)

single inlet, Ø 150



- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Counter-clockwise, seen on rotor
- **Type of protection:** IP 20
- **Insulation class:** "B"
- **Mounting position:** Any
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage VDC	Spannungsbereich VDC	Air flow m³/h	Speed/rpm	Power input W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. <sup>1)</sup> °C	Mass kg	Electr. connection p. 40
R1G 150-AN63 -**	M1G055-BD	Ⓐ	24	16-28	290	3040	30	1,40	66	-25..+60	1,3	G)
		Ⓑ	24	16-28	180	3110	28	1,31	67	-25..+60	1,3	G)

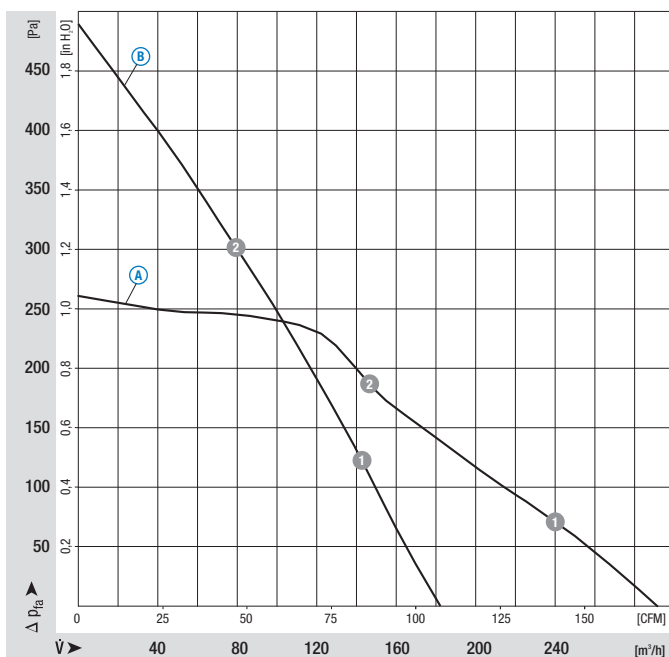
subject to alterations

Ⓐ measured without scroll housing

Ⓑ measured in ebm-papst scroll housing

<sup>1)</sup> ambient temp. necessitates technical adaption.

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing 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 42 ff.

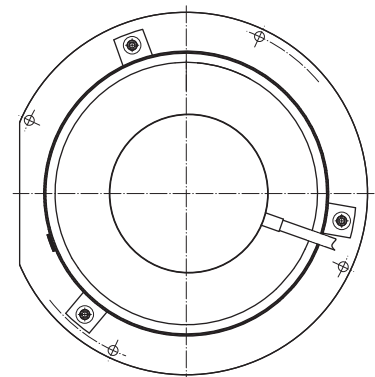
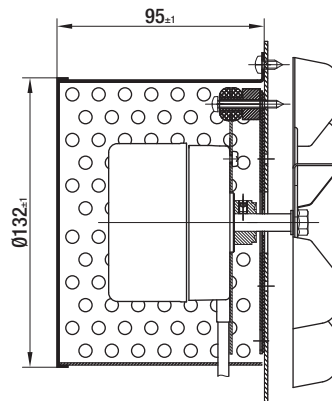
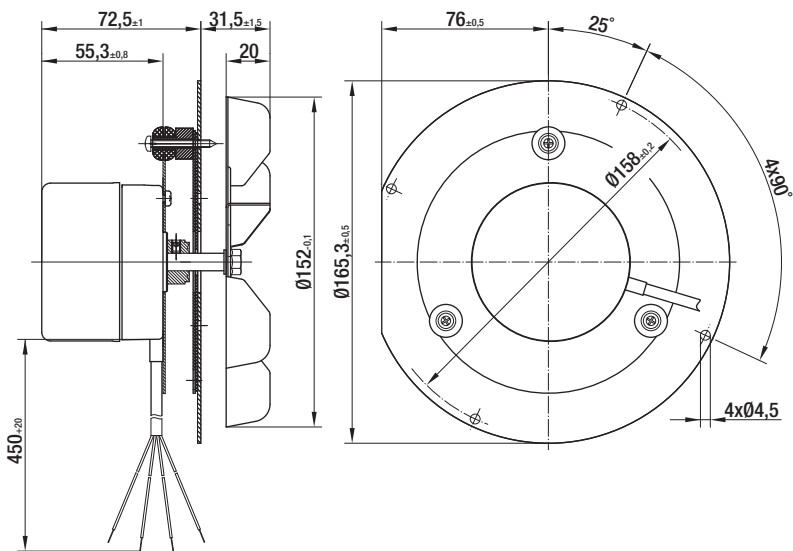
	n [rpm]	P <sub>1</sub> [W]	I [A]
Ⓐ 1	3030	31	1,40
Ⓐ 2	3110	29	1,30
Ⓑ 1	3190	26	1,20
Ⓑ 2	3360	22	1,00

- **Technical features:** Control input 0-10 VDC / PWM, Tach output
- **Cable exit:** Variable

Selection



Type	without motor protection hood	with motor protection hood
R1G 150-AN63 -**	R1G 150-AN63 -02	R1G 150-AN63 -08



# AC radial fan (exhaust air)

single inlet, Ø 152



- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 00
- **Insulation class:** "H"
- **Mounting position:** Shaft position horizontal or shaft position vertical (motor on top)
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Sleeve bearings/ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Min. backpressure	Perm. amb. temp. <sup>1)</sup>	Mass	Electr. connection
Type	Motor		VAC	Hz	m <sup>3</sup> /h	rpm	W	A	dB(A)	Pa	°C	kg	p. 41
RR 152 - 3025 LH	EM 3025	Ⓐ	230	50	220	2435	39	0,34	60	0	-25..+85	0,85	B)
		Ⓑ	230	50	140	2470	39	0,34	61	0	-25..+85	0,85	B)

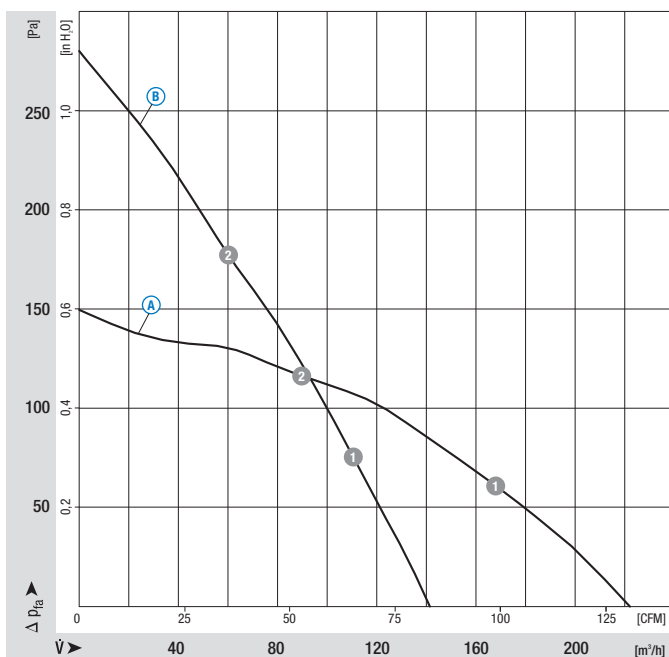
subject to alterations

Ⓐ measured without scroll housing

Ⓑ measured in ebm-papst scroll housing

<sup>1)</sup> higher ambient temperatures on request

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing without protection against accidental contact

	n [rpm]	P <sub>1</sub> [W]
Ⓐ 1	2400	39
Ⓐ 2	2520	37
Ⓑ 1	2520	37
Ⓑ 2	2640	34

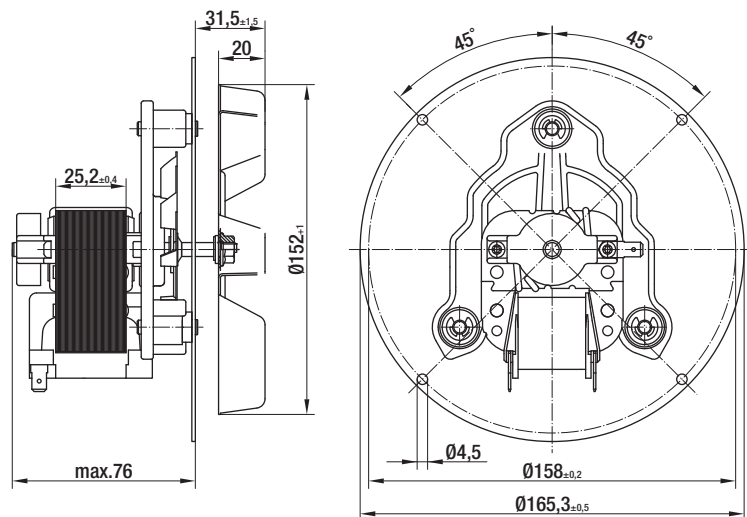
Suction-side noise levels: L<sub>wA</sub> as per ISO 13347, L<sub>pA</sub> measured at 1 m distance to fan axis

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 42 ff.

- **Optional:** Hall IC connection, Motor protection hood
- **Electrical connection:** via flat pin
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1
- **Approvals:** VDE-compliant design, optionally UL-compliant design possible



# AC radial fan (exhaust air)

single inlet, Ø 152



- **Material:** Impeller made of corrosion-resistant stainless steel
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 00
- **Insulation class:** "H"
- **Mounting position:** Shaft position horizontal or shaft position vertical (motor on top)
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Sleeve bearings/ball bearings

## Nenndaten

Type	Motor	Curve	Nominal voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Sound pressure level	Min. backpressure	Perm. amb. temp. <sup>1)</sup>	Mass	Electr. connection
Type	Motor		VAC	Hz	m³/h	rpm	W	A	dB(A)	Pa	°C	kg	p. 41
RR 152 - 3030 LH	EM 3030	Ⓐ	230	50	235	2575	44	0,37	61	0	-25..+85	1,0	B)
		Ⓑ	230	50	150	2600	44	0,37	62	0	-25..+85	1,0	B)

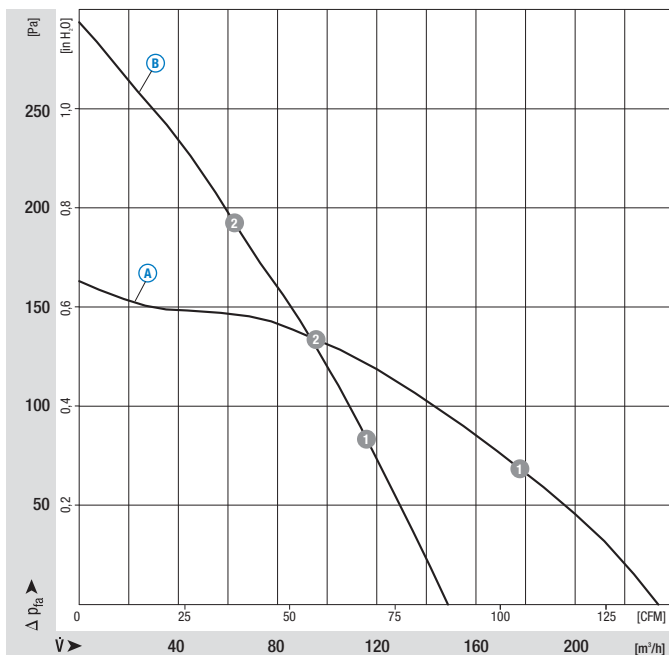
subject to alterations

Ⓐ measured without scroll housing

Ⓑ measured in ebm-papst scroll housing

<sup>1)</sup> higher ambient temperatures on request

## Curves



Air performance measured as per: ISO 5801, Installation category A, without scroll housing respectively in ebm-papst scroll housing without protection against accidental contact

	n [rpm]	P <sub>1</sub> [W]
Ⓐ 1	2540	45
Ⓐ 2	2620	42
Ⓑ 1	2640	42
Ⓑ 2	2730	39

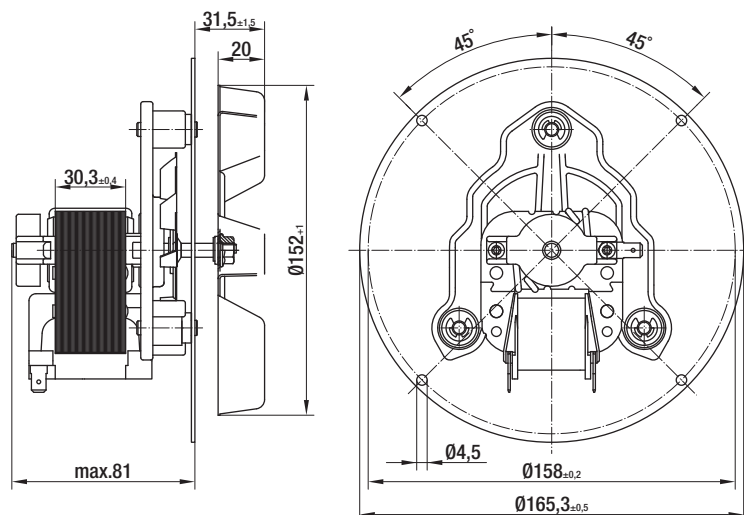
Suction-side noise levels: L<sub>wA</sub> as per ISO 13347, L<sub>pA</sub> measured at 1 m distance to fan axis

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

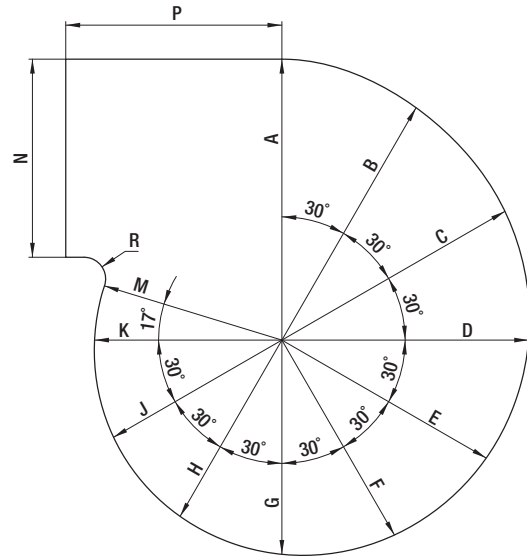
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 42 ff.

- **Optional:** Hall IC connection, Motor protection hood
- **Electrical connection:** via flat pin
- **Protection class:** I
- **Product conforming to standards:** EN 60335-1
- **Approvals:** VDE-compliant design, optionally UL-compliant design possible



# Scroll dimensions

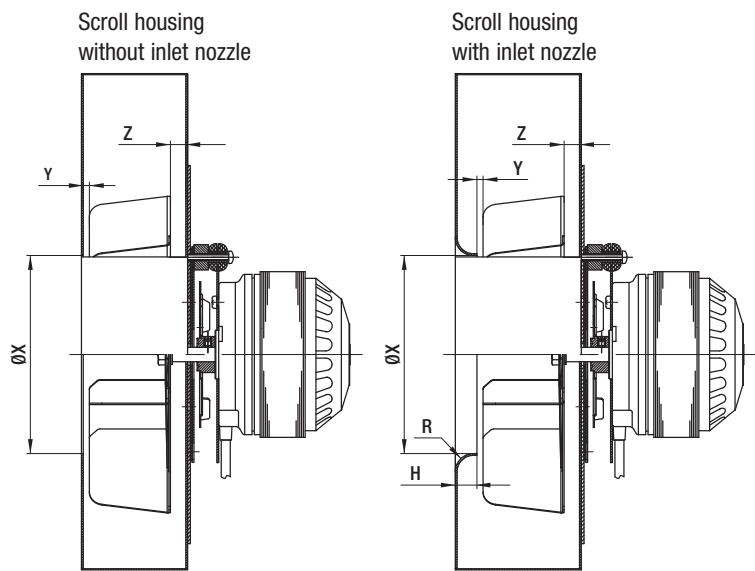
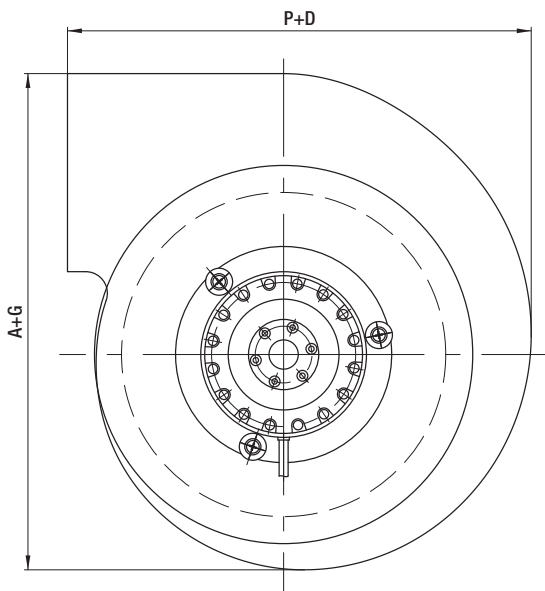


- **Material:** galvanized sheet steel

## Scroll dimensions for AC / EC centrifugal fans

Size	A	B	C	D	E	F	G	H	J	K	M	N	P	R
<b>150/152</b>	130	124	119	114	109	104	99	94	90	87	86	92	100	10
<b>160</b>	139	132	127	122	116	111	106	100	96	93	92	98	107	11
<b>180</b>	156	149	143	137	131	125	119	113	108	104	103	110	120	12
<b>210</b>	182	174	167	160	152	146	139	132	127	121	120	128	140	14

subject to alterations



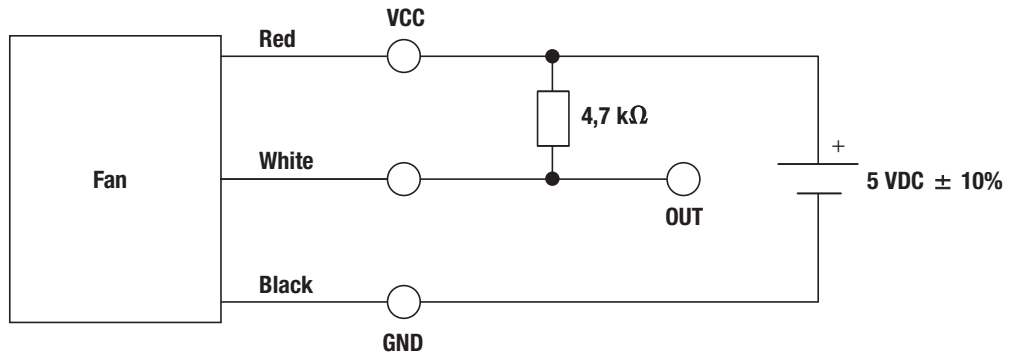
## Distance between impeller and scroll housing/inlet nozzle

Size	X	Y	Z	R	H
<b>150/152</b>	90-110	5	10	10	10
<b>160</b>	100-120	5	10	10	10
<b>180</b>	110-130	5	10	12	12
<b>210</b>	120-135	5	10	12	12

subject to alterations

# Connection diagram Hall IC

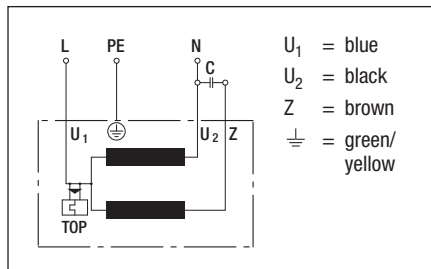
for speed monitoring with AC centrifugal fans (exhaust air)



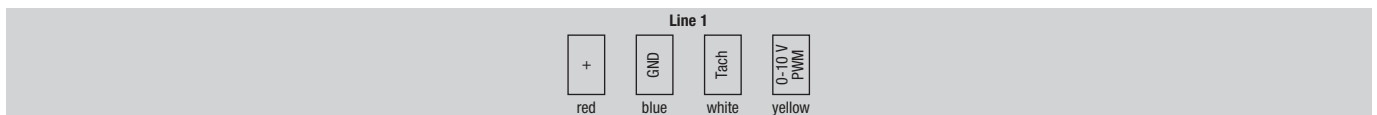
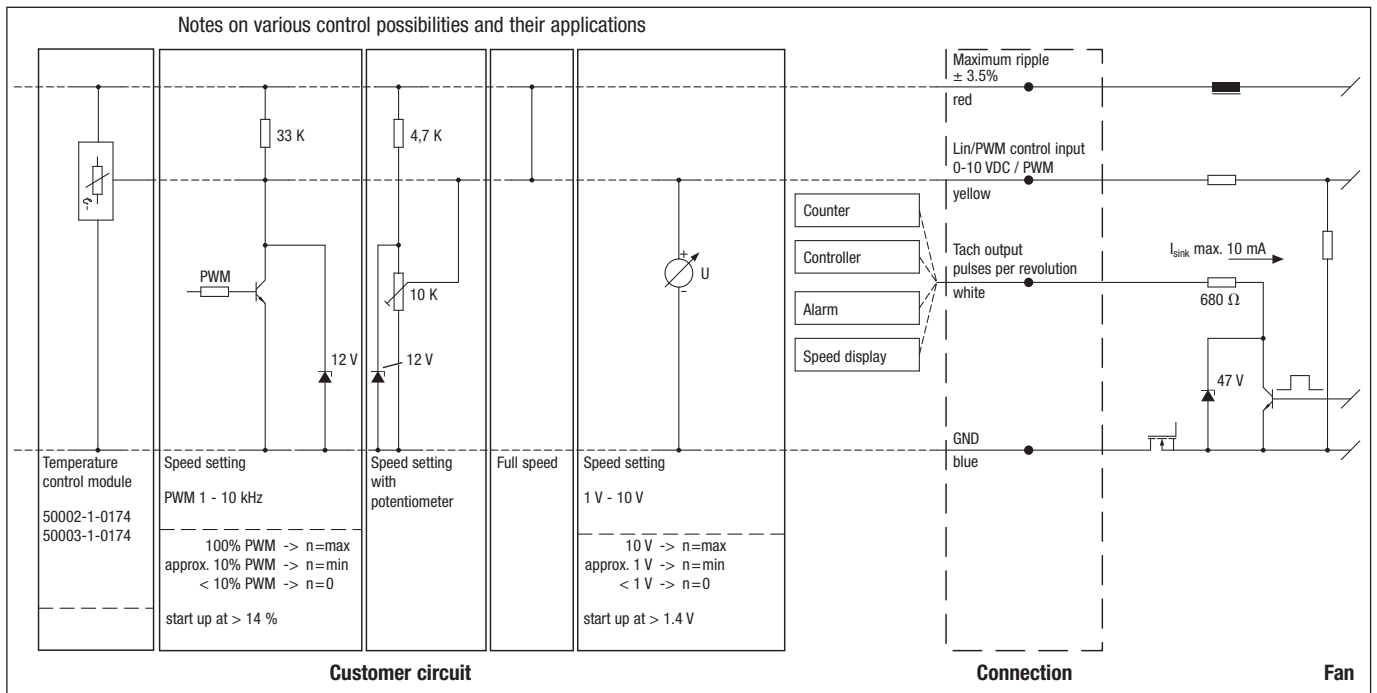
The voltage for Hall IC supply should be 5 VDC  $\pm$  10%.  
With 5 VDC voltage supply, a 4.7 kΩ pull-up resistor  
between VCC and OUT is needed.

# Electrical connections AC/EC

## A1) Single-phase capacitor motor with TOP wired internally

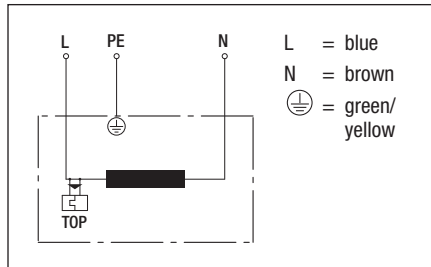


## G) EC motors (nominal voltage 12 / 24 VDC)

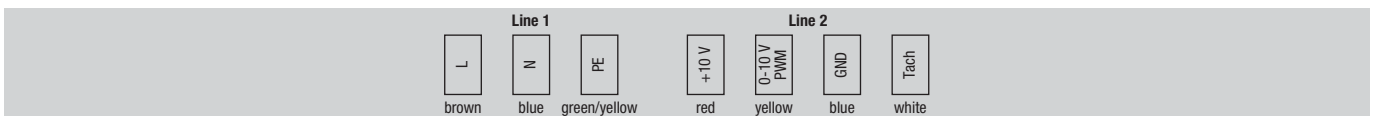
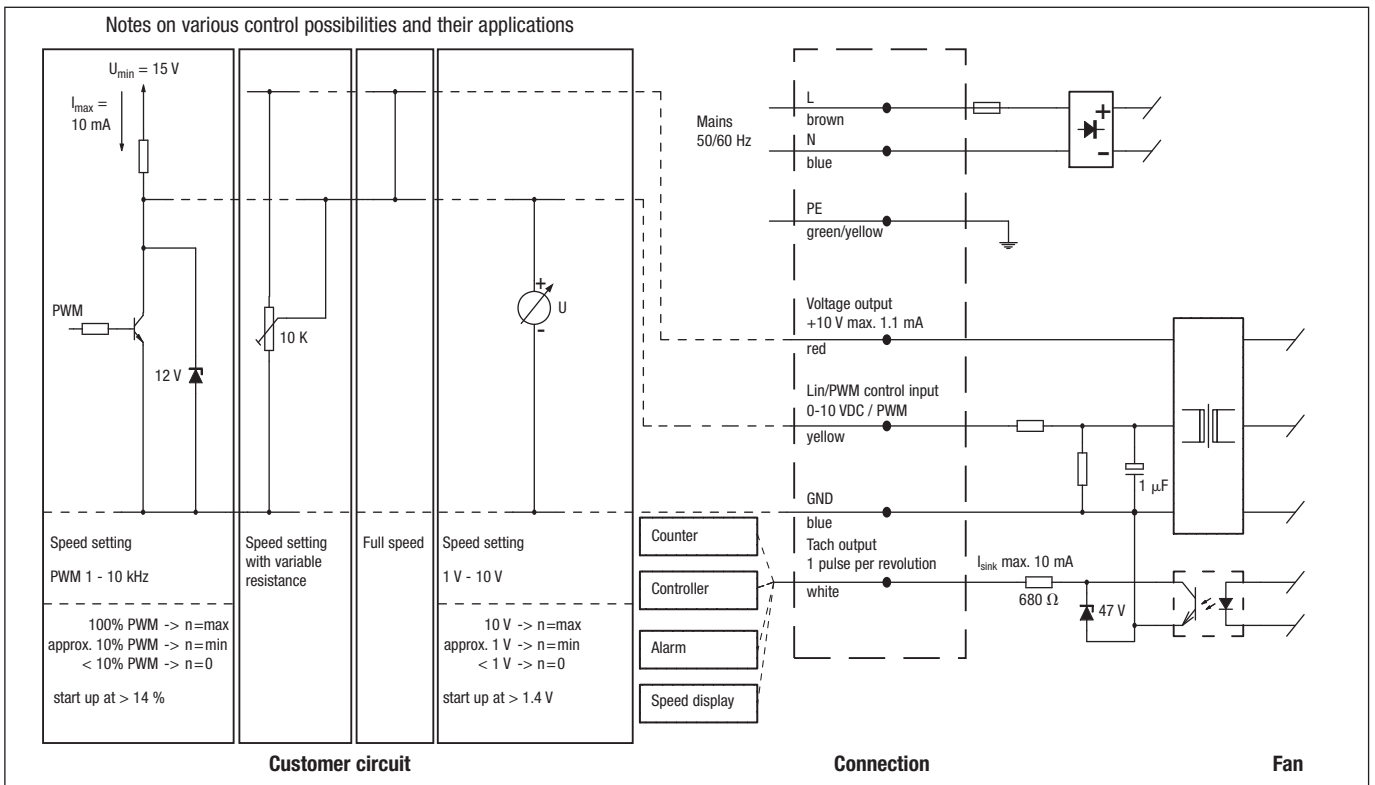


Line	Connection	Colour	Assignment / function
1	+	red	Maximum ripple $\pm 3.5\%$
	GND	blue	GND
	Tach	white	Tach output: 2 pulses / revolution
	0-10 V / PWM	yellow	Control input (Impedance 100 k $\Omega$ )

**B) Shaded pole motor**  
with TOP wired internally



**H1) EC motors** (size 055, line-fed)



Line	Connection	Colour	Assignment / function
1	L	brown	Mains 50/60 Hz, phase
	N	blue	Mains 50/60 Hz, neutral
	PE	green/yel	Protective earth

Line	Connection	Colour	Assignment / function
2	+10 V	red	Voltage output +10 V max. 1.1 mA
	0-10 V / PWM	yellow	Control input (Impedance 100 kΩ)
	GND	blue	GND
	Tach	white	Tach output: 1 pulse per revolution

# 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/m<sup>3</sup>.

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.

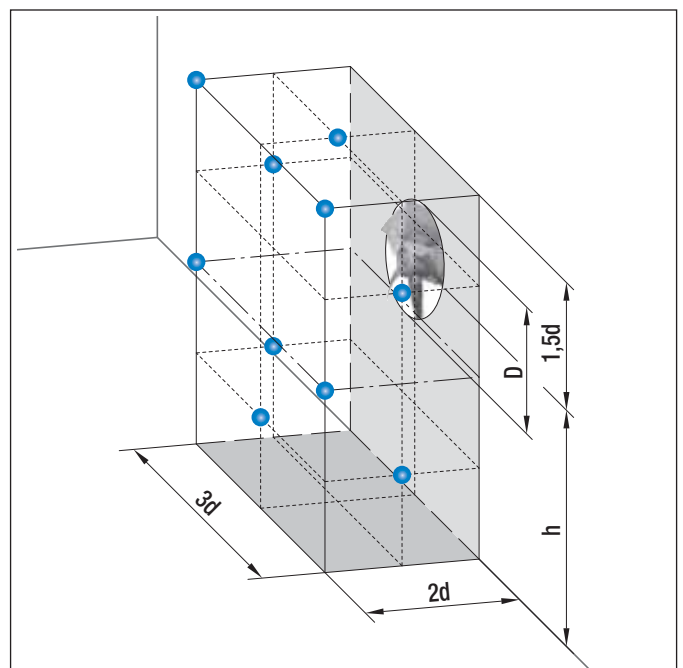
Measuring configuration as per ISO 13347-3 respectively DIN 45635-38:

- 10 measuring points

$$d \geq D$$

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

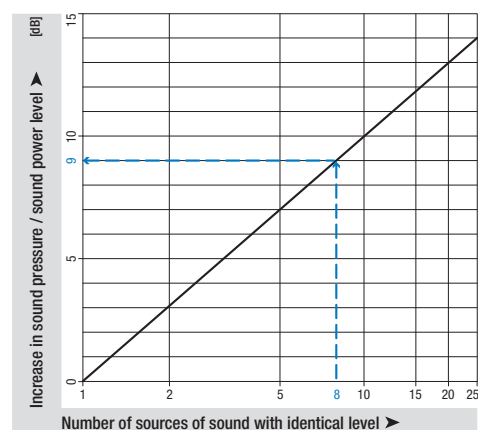
$$\text{Measurement area } S = 6d^2 + 7d(h + 1,5d)$$



### 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.

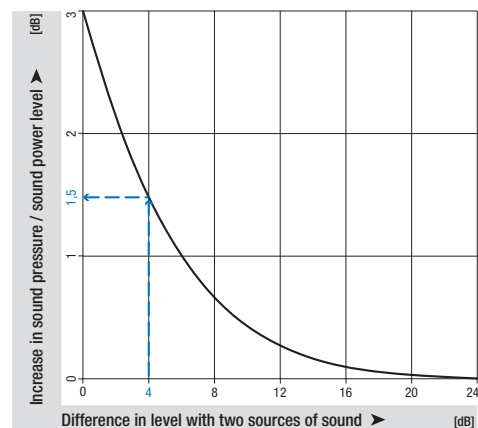
Example: 8 A3G800 axial fans are on a condenser. According to the data sheet, the sound pressure level of a fan is approximately 75 dB(A). The level increase measured from the diagram is 9 dB. Thus the overall sound level of the installation can be expected to be 84 dB(A).



### 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.

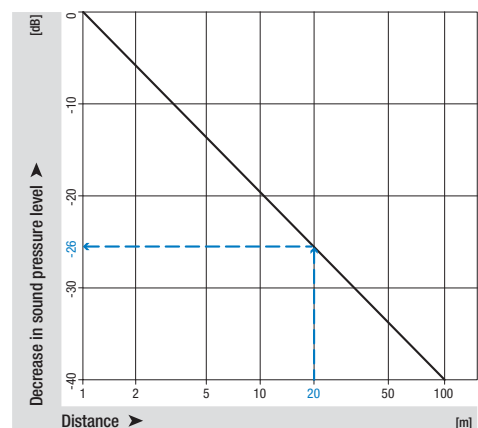
Example: There is an axial fan A3G800 with a sound pressure level of 75 dB(A) at the operating point and an axial fan A3G710 with 71 dB(A) in a ventilation unit. The level difference is 4 dB. The level increase can now be read in the diagram as approx. 1.5 dB. This means that the overall sound level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

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