Automotive brushless DC fans
Climate control for commercial vehicles

Version 2012-09



The engineer's choice

ebmpapst

Automotive brushless DC fans

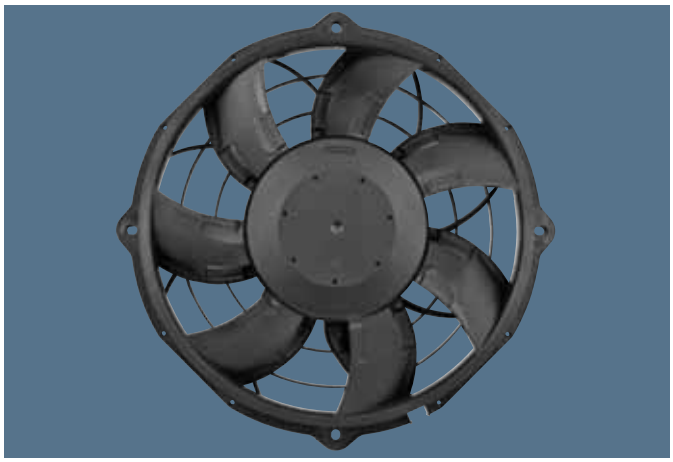
Our automotive brushless DC (BL-DC) axial fans and BL-DC dual centrifugal blowers set the trend in commercial vehicle climate control. They not only fulfil today's increased expectations for comfort, for example in buses, they also work without wear – because they are brushless – for over 40,000 hours. No extra maintenance, no additional service required. That is the reliability you expect from ebm-papst.

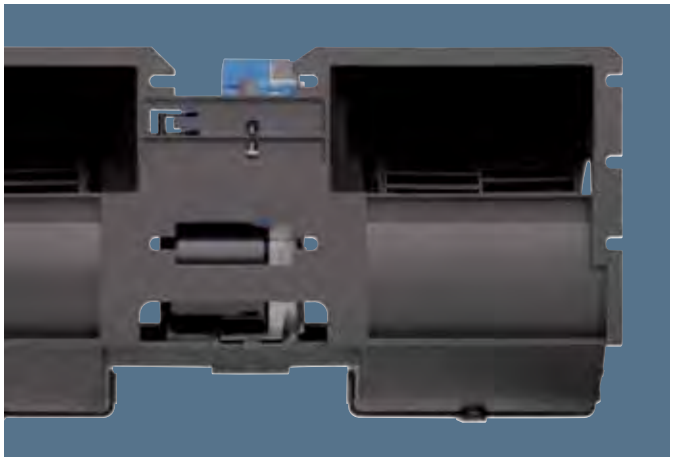
Advantages and characteristics in a glance

- Over 40,000 operating hours
- Continuous speed control
- High efficiency
- Low noise emission due to aerodynamically optimised impellers
- Increased reliability due to high integration density of the electronics
- Can be retrofitted to existing systems
- Meet the highest EMC requirements
- Control characteristic can be parameterised
- Optimised voltage independence
- Extended temperature range
- Durable ball bearings

Table of contents







GreenTech: The Green Company 4

Ideas for technological change in commercial vehicles 6

EC dual centrifugal blowers with brushless DC motor “Premium” 9

EC dual centrifugal blowers with brushless DC motor “Basic” 19

EC axial fans with brushless DC motor 25

EC centrifugal fans - RadiCal, backward curved 43

Accessories 50
- Temperature control module, temperature sensor
- Connection leads

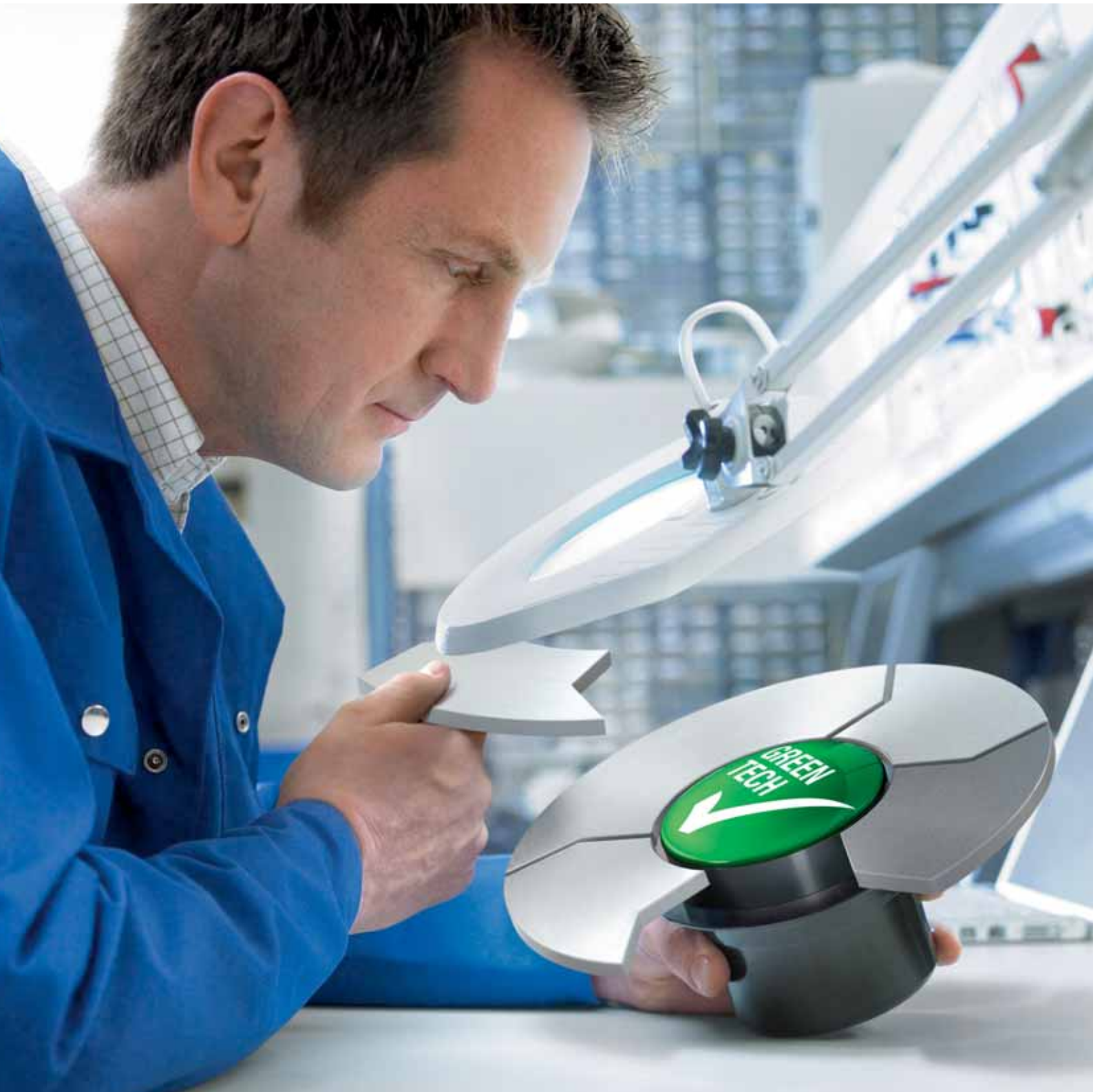
Electrical connections 53

Technical parameters & scope 58

ebm-papst representatives & subsidiaries 62

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.

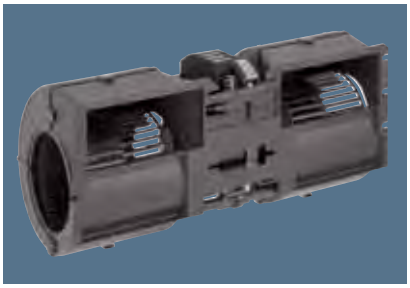
GreenTech is ecofriendly production.
GreenTech also stands for maximum energy efficiency in our production processes. There, the intelligent use of industrial waste heat and groundwater cooling, photovoltaics and, of course, our own cooling and ventilation technology are of the utmost importance. Our 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 ebm-papst. 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 GreenTech EC technology does not (yet) make sense from an application viewpoint – feature the greatest possible connection of economy and ecology.

Ideas for technological change in commercial vehicles





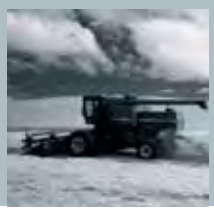
EC dual centrifugal blowers: for maximum performance with the smallest installation space; easy to control and extremely quiet.

A comfortable environment in commercial vehicles is by no means just a matter of amenities. Both passenger transportation in buses and coaches along with trucking that is as free of stress and fatigue as possible place high demands on vehicle technology, particularly climate control, ventilation and air-conditioning.

For many years, renowned bus manufacturers have installed air-conditioning systems with brushless and wear-free centrifugal blowers and axial fans from ebm-papst. These products have also come to be used widely for climate control and ventilation of driver's cabs in trucks, tractors and construction equipment as well as in transport refrigeration systems.

A wide variety of climate control system manufacturers rely the experience and excellent skills of ebm-papst in our core competencies of motor development, aerodynamics and electronics.




Fans and blowers:
for commercial vehicle climate control
and cooling of individual components..

Meeting high demands with new technology

In modern commercial vehicles, EC technology has now become the standard. Our new second-generation EC axial fans and EC dual centrifugal blowers set the trend in commercial vehicle climate control around the world. Our EC fans demonstrate their clear superiority even in hot climates and tropical regions, where they have also already proven their excellent performance.

But customers rely on ebm-papst products not only in the area of climate control. Increasingly, EC fans are also finding application in the cooling of heat exchangers in the engine compartment of vehicles.

In comparison:

In commutator motors from other manufacturers, the commutator performs the task of distributing current to the coils. The commutator consists of copper segments embedded in an insulating compound. Mechanical springs press the integrated carbon brushes onto the commutator. The friction between these two mechanical components is the weak point of conventional DC motors. After a running time of approximately 5,000 hours, the carbon brushes and the commutator are worn out. As a result, the entire blower needs to be replaced. Furthermore, open loop speed control is possible only with external electronics.

This is not true of brushless DC motors from ebm-papst. An electronic control integrated directly into these motors assumes the task of current distribution. No brushes means no parts to wear out. This increases the operating time of these motors to more than 40,000 hours. As a result, the user not only saves on spare parts and repair costs, but also avoids unproductive downtimes and potential damage to reputation.

EC motors are energy-efficient, since the integrated electronics use continuous closed loop speed control to draw from the vehicle electrical system only the energy actually required. In commercial vehicle applications, it is also important that fans withstand environmental influences wich are constantly fluctuating. Standard products would provide less than satisfactory results in these situations. Therefore, ebm-papst automotive products also feature reliable protection against load dump, reverse polarity, shock and vibration as well as damage from moisture and dirt in a wide temperature range. This requires exceptional effort when selecting materials and testing the products. We use extreme tests, which we have designed together with market-leading OEMs, based on real-world conditions (such as salt spray fog, vibration and temperature change tests) to ensure the performance of the fans.

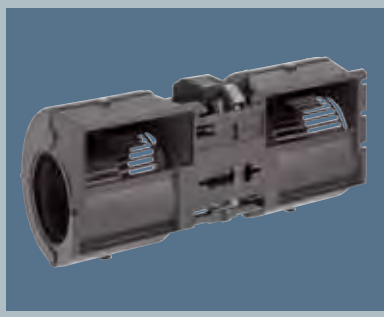



In addition to the significantly longer service life, our intelligent EC fans guarantee extended open and closed loop control options. The function of the fans can be determined at any time via a diagnostic output. Moreover, they have an excellent electromagnetic compatibility and operate extremely quietly.

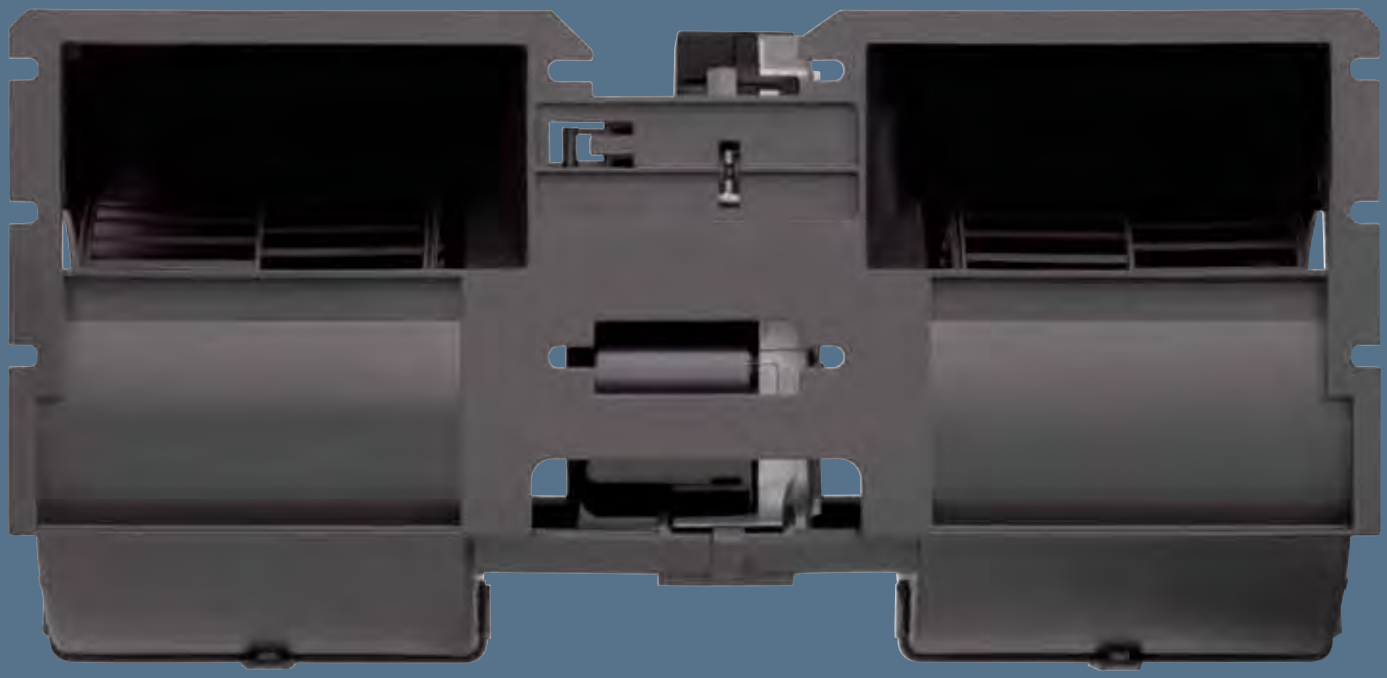
But ebm-papst offers even more:

If you are ever unable to find a solution with our products, contact us. As a highly competent consultant and practically oriented implementer, we will certainly be able to identify a solution in your case using our in-depth knowledge gained from many applications.





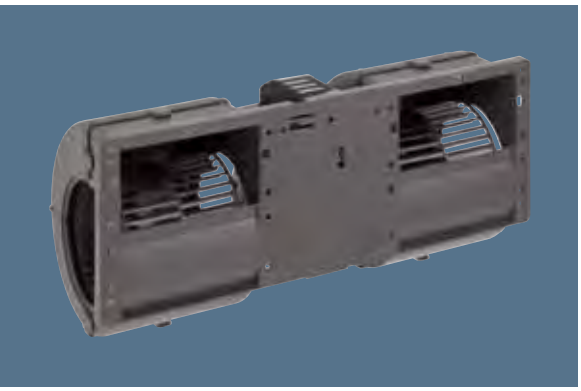
EC dual centrifugal blowers with brushless DC motor **“Premium”**



ErP2015 EXCEEDS THE NORM

EC dual centrifugal blowers

with brushless DC motor, Ø 097



- **Material:** Housing: PP plastic, coloured black (conforms to UL 94 HB)
  Impeller: PA plastic
- **Type of protection:** IP 24 KM (without plug)
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings on both sides
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5

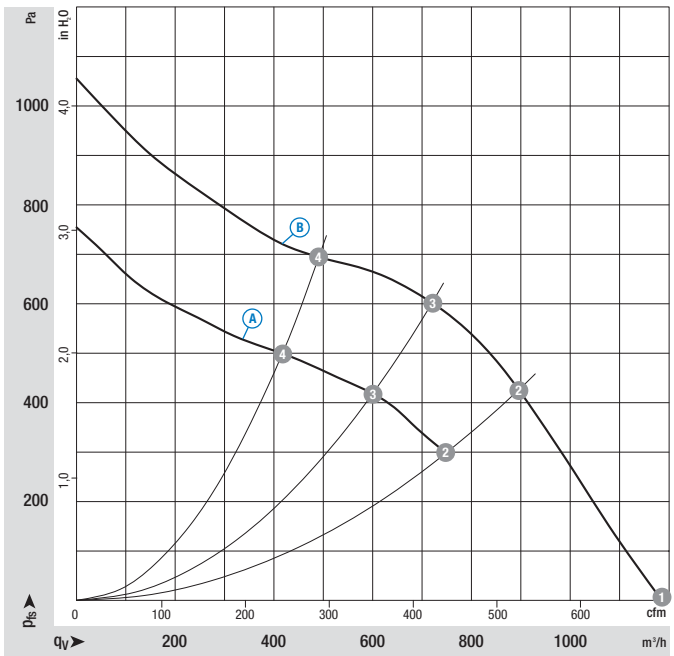
Nominal data

Type	Motor	Curve	Nominal voltage	Nominal voltage range	Flow rate	speed/rpm	Input power	Current draw	Min. back pressure	Sound pressure level	Perm. amb. temp.	Mass	Electr. connection
			VDC	VDC	m³/h	rpm	W	A	Pa	dB(A)	°C	kg	
K3G 097-AK32 -42[1]	M3G074-CF	A	13	9-15	750	3630	195	15,0	300	63	-40..+85[2]	2,3	A
K3G 097-AK36 -55[1]	M3G074-CF	B	13	9-15	1180	3740	385	29,5	0	69	-40..+85[2]	2,6	A

subject to alterations

[1] 12-volt variant [2] at free air not recommended for long-term operation at 85 °C

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

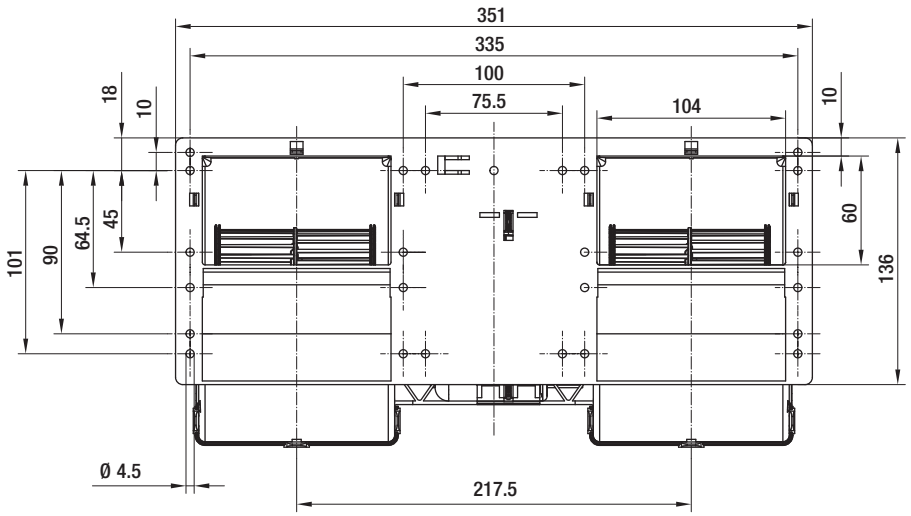
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

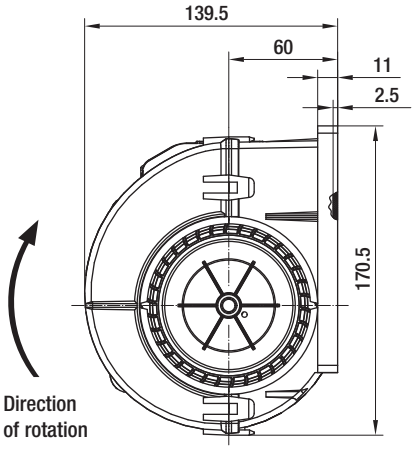
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

		n rpm	P_{ed} W	I A	L_pA dB(A)
A	1	---	---	---	---
A	2	3630	195	15,0	63
A	3	3875	177	13,5	64
A	4	4135	143	11,0	65
B	1	3740	385	29,5	69
B	2	4400	344	26,4	68
B	3	4775	309	23,8	69
B	4	4970	234	18,0	70

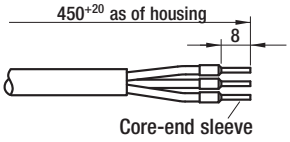
ebmpapst





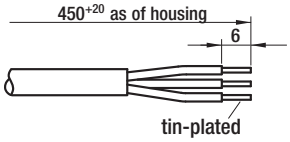
View lead connection (K3G097-AK32-42)

UN	black
PWM/LIN	yellow
GND	brown



View lead connection (K3G097-AK36-55)

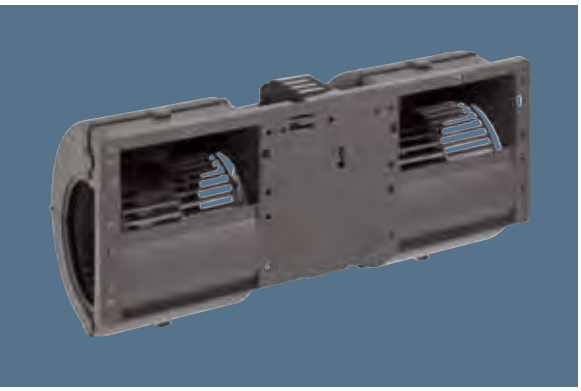
UN	black
PWM/LIN	yellow
GND	brown



ErP2015 EXCEEDS THE NORM

EC dual centrifugal blowers

with brushless DC motor, Ø 097



- **Material:** Housing: PP plastic, coloured black (conforms to UL 94 HB)
  Impeller: PA plastic
- **Type of protection:** IP 24 KM (without plug)
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings on both sides
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 3

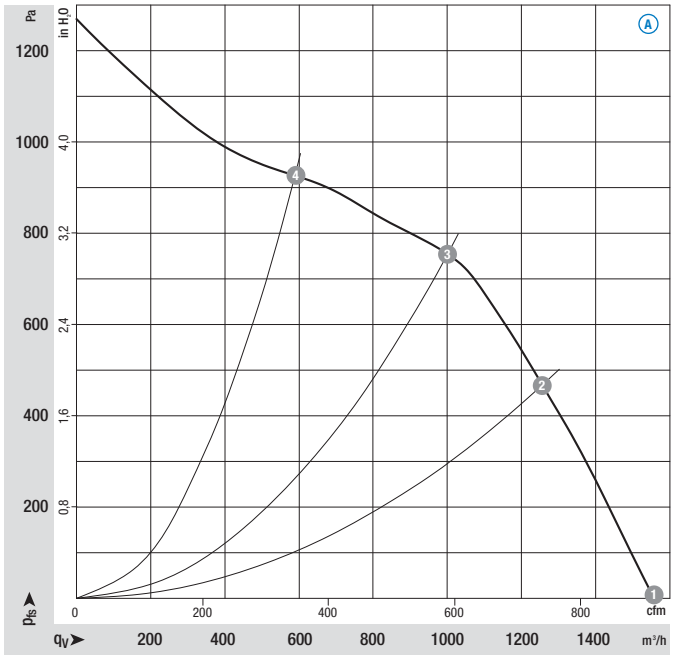
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
K3G 097-AK68 -85[1)(2)]	M3G074-CF	Ⓐ	26	16-32	1560	4600	690	26,5	75	-40..+60[3)]	2,4	G

subject to alterations

[1)] 24-volt variant [2)] housing/impeller also available in V0 material [3)] short-term operation at up to 85 °C possible

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

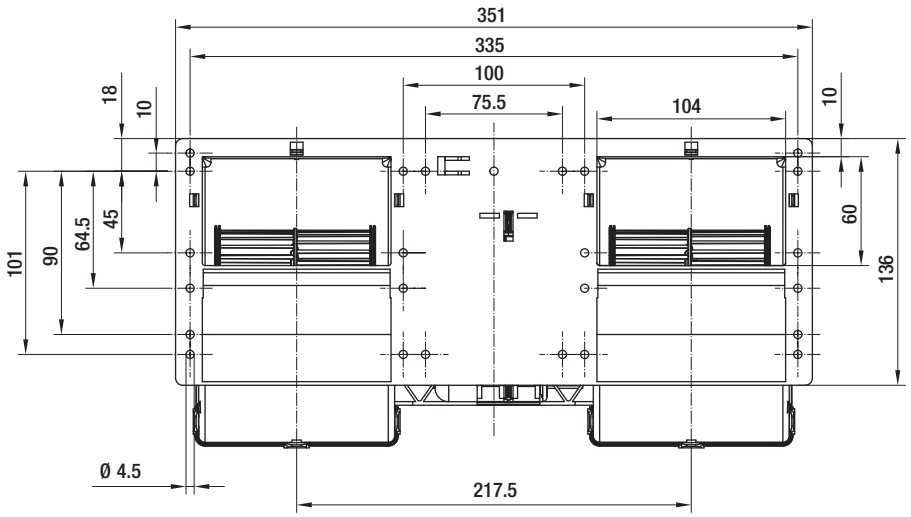
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

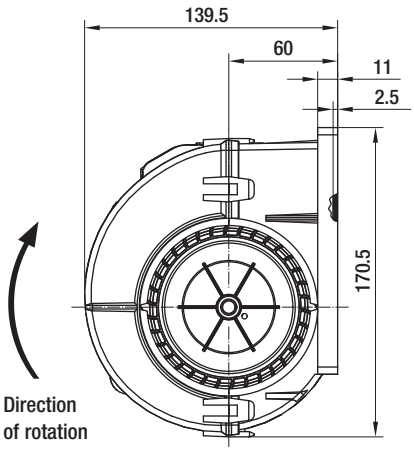
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	4600	690	26,5	75
Ⓐ 2	5095	604	23,2	74
Ⓐ 3	5435	526	20,2	74
Ⓐ 4	5720	365	14,0	74

ebmpapst



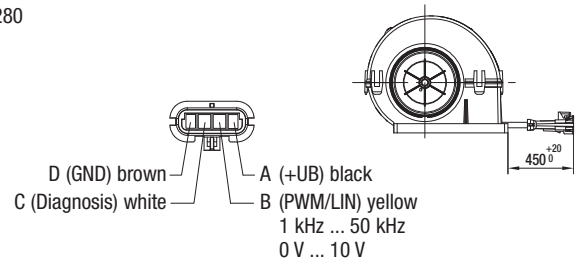


View connector plug

4-pole lead connection (450 mm) with plug Delphi Metri-Pack 280

Socket on customer side:

Housing:	Delphi 12129565
Secondary lock:	Delphi 15300016 (TPA lock)
Terminals:	Delphi 12077411 Delphi 12077413
Seals:	Delphi 15324981 Delphi 15324985



ErP2015 EXCEEDS THE NORM

EC dual centrifugal blowers

with brushless DC motor, Ø 097



- **Material:** Housing: PP plastic, coloured black (conforms to UL 94 HB)
  Impeller: PA plastic
- **Type of protection:** IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings on both sides
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5

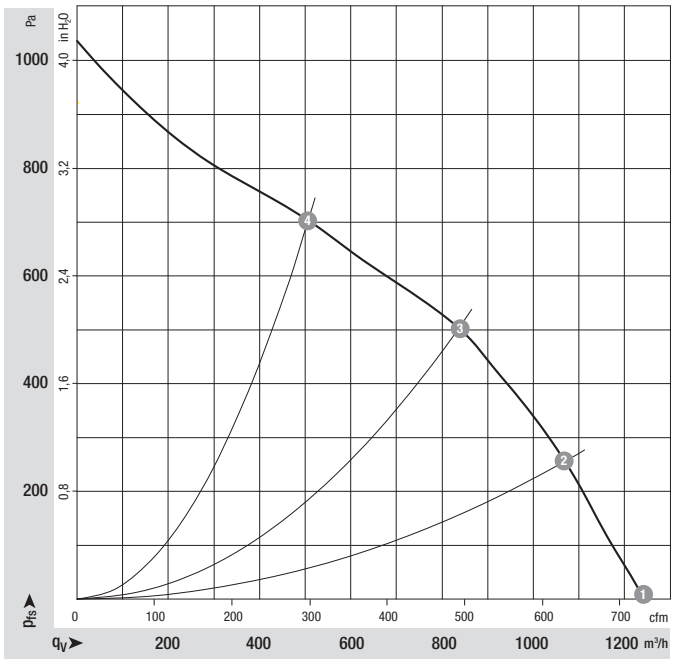
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Min. back pressure Pa	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
K3G 097-AF24 -01[1]	M3G084-BF	Ⓐ	26	16-32	1240	3730	390	15,0	0	70	-40..+85[2]	2,0	D

subject to alterations

[1] 24-volt variant [2] over + 70 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

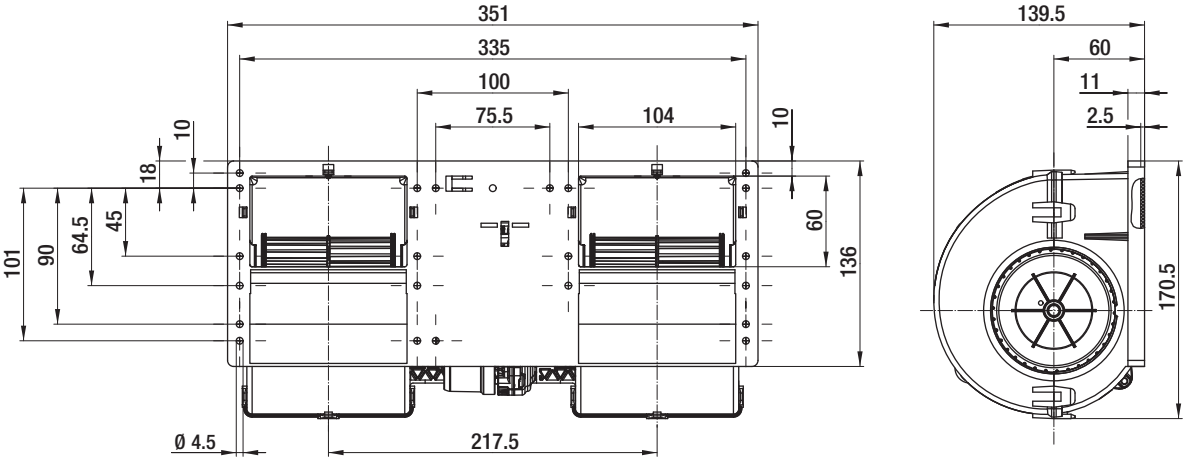
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

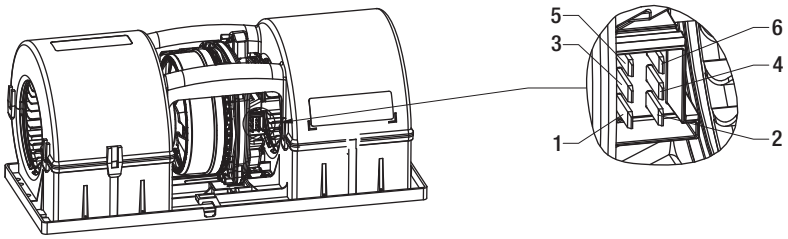
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	3730	390	15,0	70
Ⓐ 2	4125	363	13,9	69
Ⓐ 3	4490	309	11,9	69
Ⓐ 4	4985	245	9,4	70

ebmpapst





View connector plug

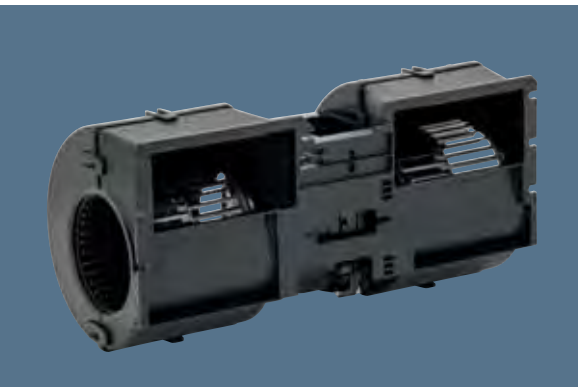
1	= UN	black
2	= GND	brown
3	= PWM/LIN	yellow
4	= INVLIN	orange
5	= LOWER	blue
6	= Diagnostic output	white

AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02001-4-1021 (not included in delivery)

ErP2015 EXCEEDS THE NORM

EC dual centrifugal blowers

with brushless DC motor, Ø 097



- **Material:** Housing: PP plastic, coloured black (conforms to UL 94 HB)
  Impeller: PA plastic
- **Type of protection:** IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings on both sides
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5

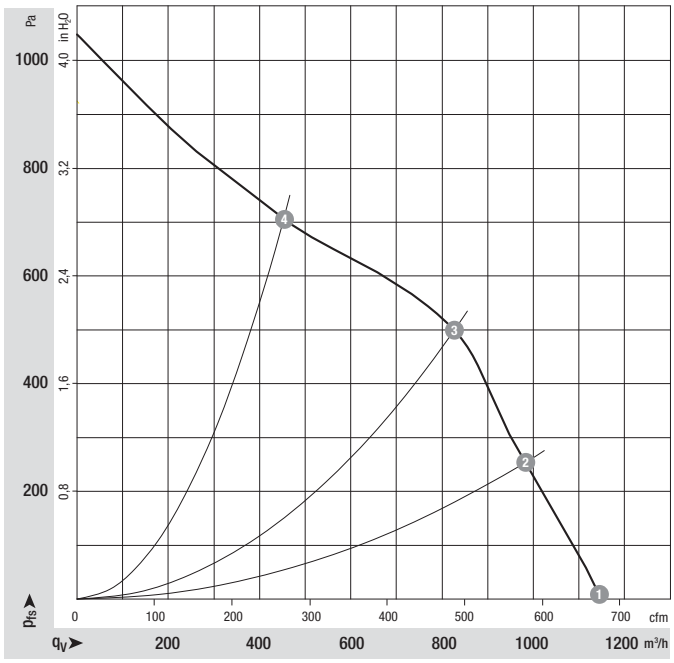
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Min. back pressure Pa	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
K3G 097-BF24 -01(1)	M3G084-BF	Ⓐ	26	16-32	1150	3960	375	14,4	0	70	-40..+85(2)	2,0	D

subject to alterations

(1) 24-volt variant (2) over + 70 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

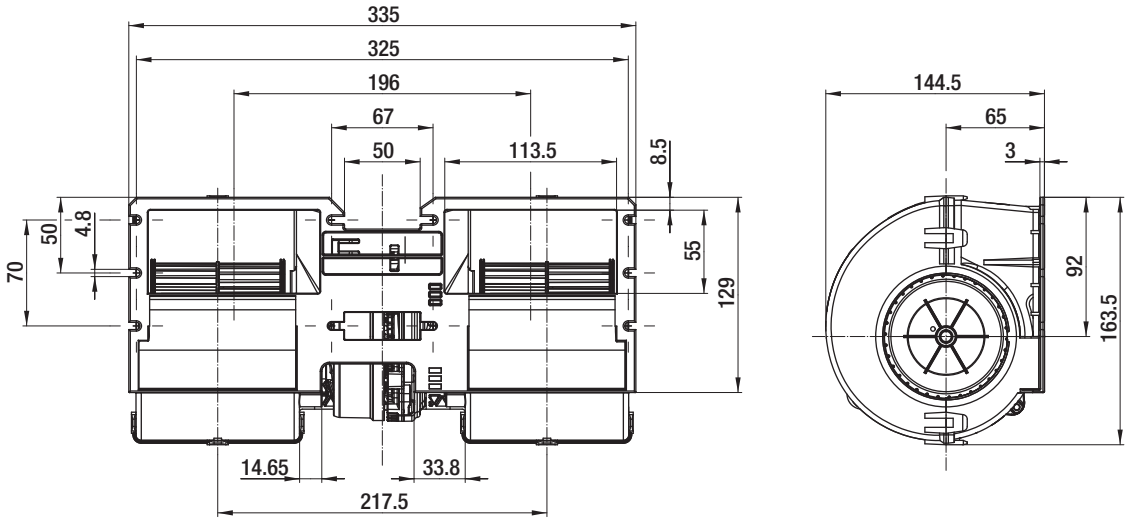
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

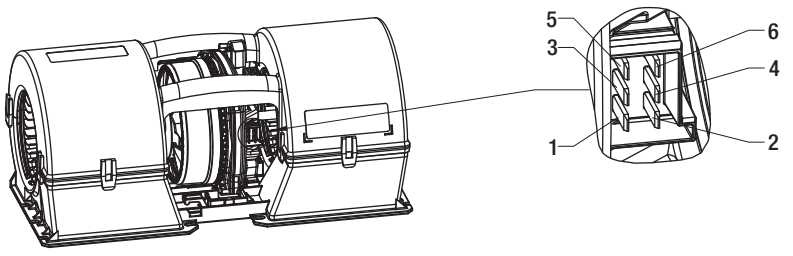
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

		n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ	1	3960	375	14,4	70
Ⓐ	2	4265	345	13,3	69
Ⓐ	3	4535	309	11,9	69
Ⓐ	4	5090	223	8,6	71

ebmpapst





View connector plug

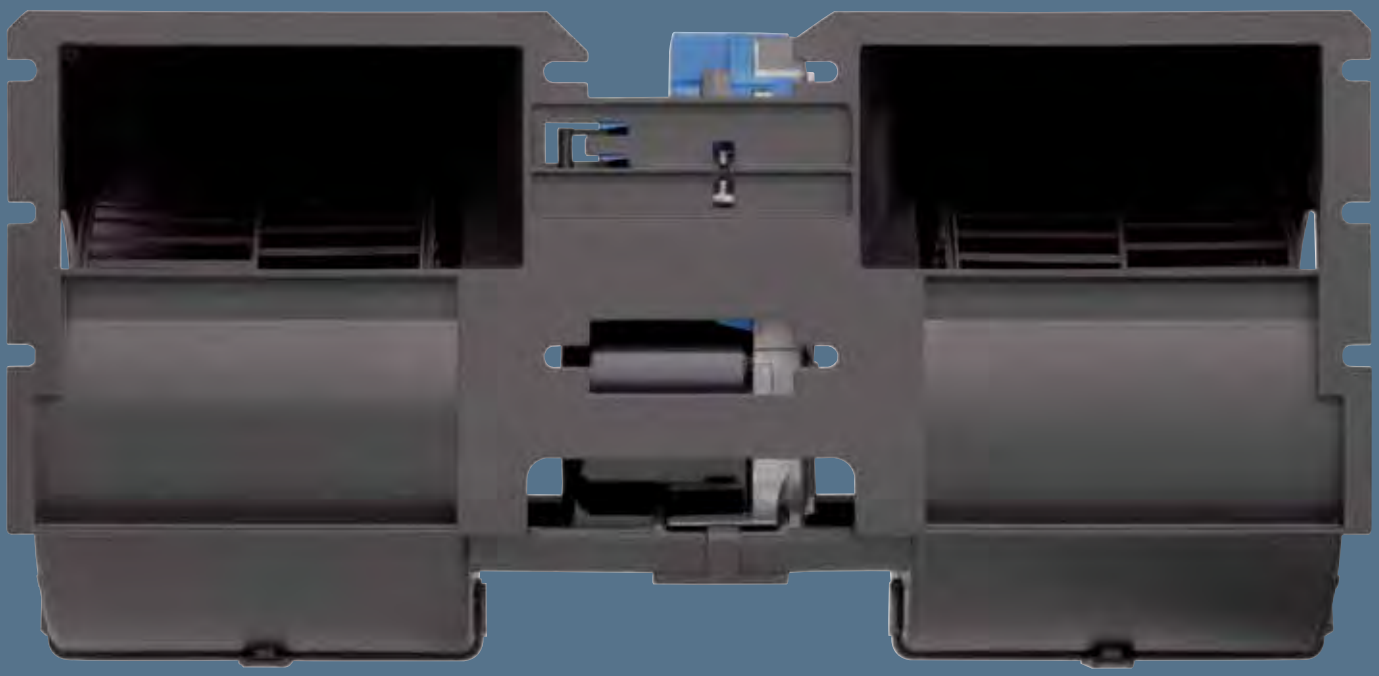
1	= UN	black
2	= GND	brown
3	= PWM/LIN	yellow
4	= INVLIN	orange
5	= LOWER	blue
6	= Diagnostic output	white

AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02001-4-1021 (not included in delivery)





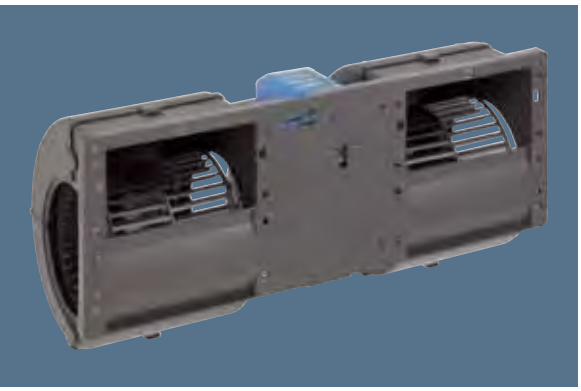
EC dual centrifugal blowers with brushless DC motor **„Basic“**



ErP2015 EXCEEDS THE NORM

EC dual centrifugal blowers

with brushless DC motor, Ø 097



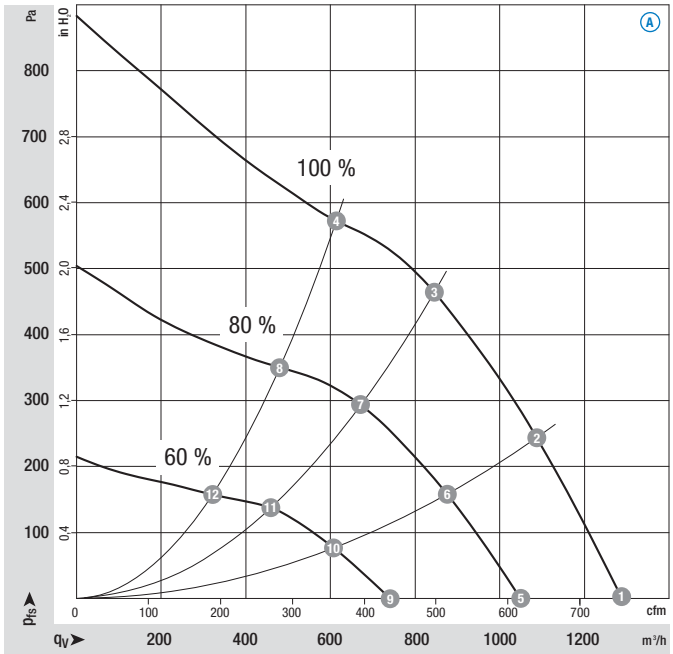
- **Material:** Housing: PP plastic, coloured black (conforms to UL 94 HB)
  Impeller: PA plastic
- **Type of protection:** IP 24 KM (without plug)
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings on both sides
- **Motor protection:** Overtemperature protection, locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** e1 approval in accordance with 2006/28/EC

Nominal data		Curve	Nominal voltage	Nominal voltage range	Flow rate	speed/rpm	Input power	Current draw	Sound pressure level	Perm. amb. temp.	Mass	Electr. connection
Type	**Motor**		**VDC**	**VDC**	**m³/h**	**rpm**	**W**	**A**	**dB(A)**	**°C**	**kg**	
K3G 097-AK34 -65[1]	M3G074-CF	Ⓐ	26	16-32	1290	3830	394	15,2	72	-40..+85[2]	2,0	F

subject to alterations

[1] 24-volt variant [2] at free air not recommended for long-term operation at 85 °C

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

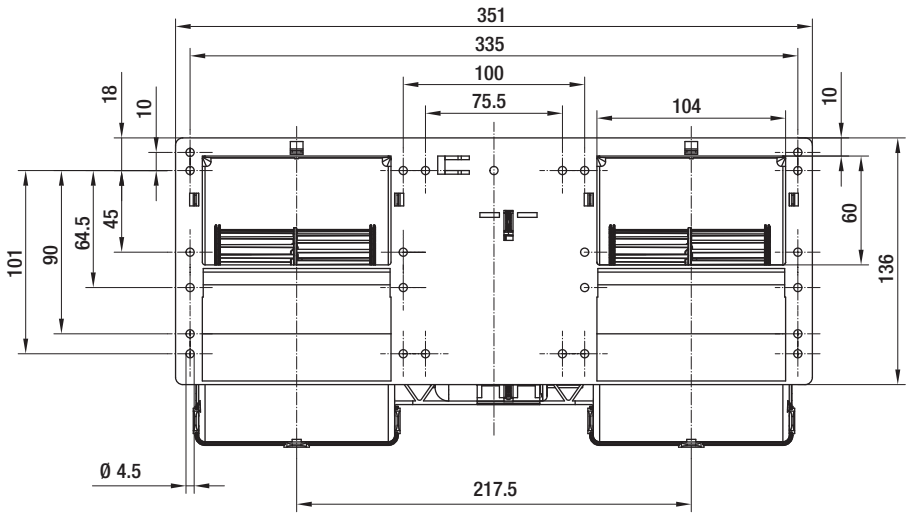
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

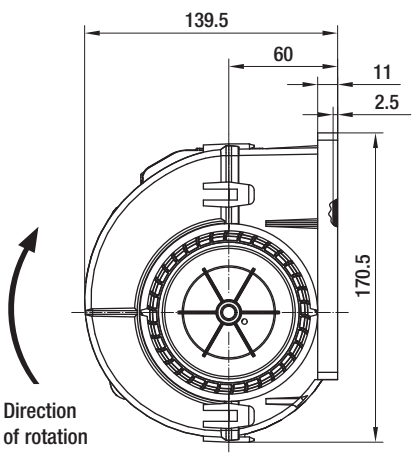
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

		n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ	1	3830	394	15,2	72
Ⓐ	2	4100	347	13,3	69
Ⓐ	3	4380	285	10,9	68
Ⓐ	4	4630	238	9,1	68
Ⓐ	5	3150	215	8,3	68
Ⓐ	6	3330	185	7,1	65
Ⓐ	7	3510	149	5,7	63
Ⓐ	8	3660	120	4,6	62
Ⓐ	9	2240	79	3,1	59
Ⓐ	10	2340	67	2,6	56
Ⓐ	11	2430	53	2,0	54
Ⓐ	12	4480	43	1,7	53

ebmpapst





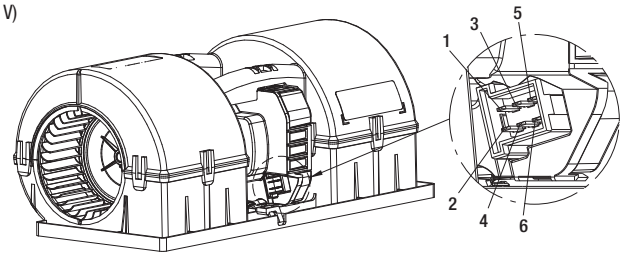
Speed setting

Pin	5	4	3	
60%	H	NC	NC	
80%	NC	H	NC	NC = not assigned
100%	NC	NC	H	H = U_N (26 V)

View connector plug

1 = + UB
2 = GND
3 = PWM/LIN, 100 % Speed
4 = 80 % Speed
5 = 60 % Speed
6 = NC (not assigned)

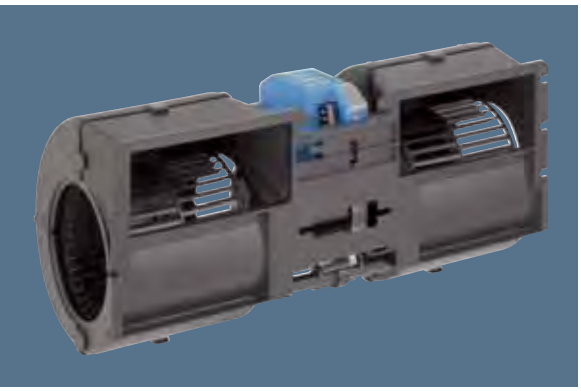
AMP Junior Power Timer, 6-pole, coded; connection lead (460 mm) with mating plug; part no. 02001-4-1021 (not included in delivery)



ErP2015 EXCEEDS THE NORM

EC dual centrifugal blowers

with brushless DC motor, Ø 097



- **Material:** Housing: PP plastic, coloured black (conforms to UL 94 HB)
  Impeller: PA plastic
- **Type of protection:** IP 24 KM (without plug)
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings on both sides
- **Motor protection:** Overtemperature protection, locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** e1 approval in accordance with 2006/28/EC

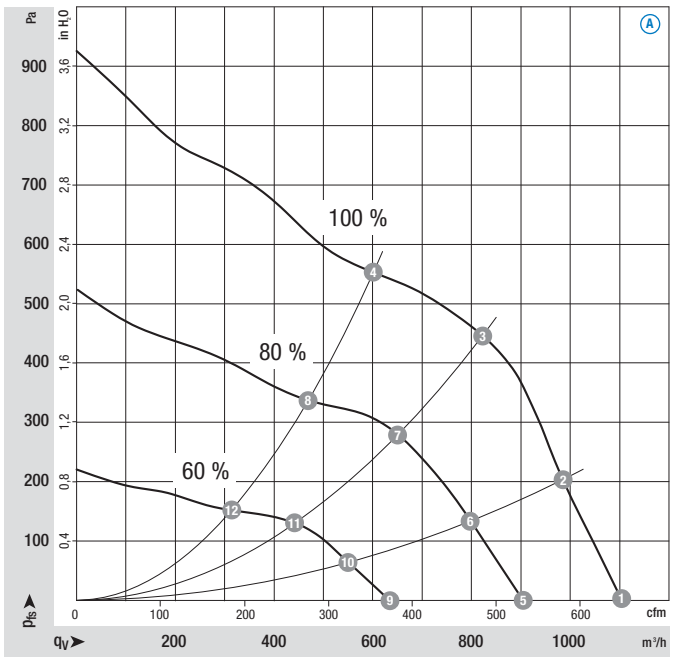
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
K3G 097-BK34 -65[1]	M3G074-CF	Ⓐ	26	16-32	1110	4040	344	13,3	70	-40..+85[2]	2,0	F

subject to alterations

[1] 24-volt variant [2] at free air not recommended for long-term operation at 85 °C

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

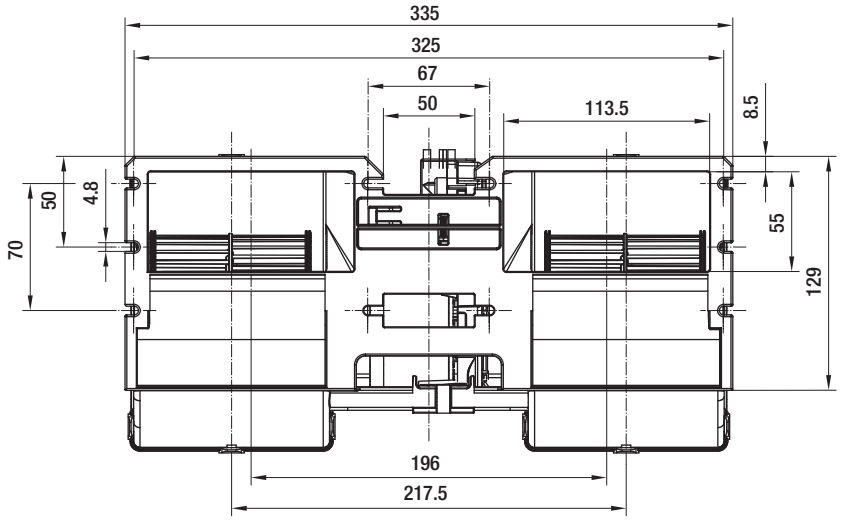
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

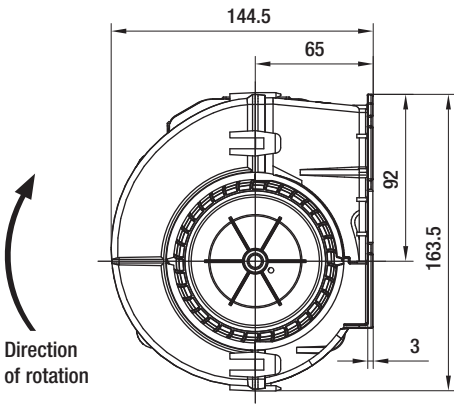
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 58 ff.

	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	4040	344	13,3	70
Ⓐ 2	4210	325	12,5	69
Ⓐ 3	4380	279	10,6	68
Ⓐ 4	4630	242	9,2	68
Ⓐ 5	3310	186	7,2	66
Ⓐ 6	3390	171	6,6	64
Ⓐ 7	3520	145	5,5	63
Ⓐ 8	3650	121	4,6	62
Ⓐ 9	2330	67	2,6	57
Ⓐ 10	2360	62	2,4	55
Ⓐ 11	2410	53	2,0	54
Ⓐ 12	2480	42	1,6	53

ebmpapst

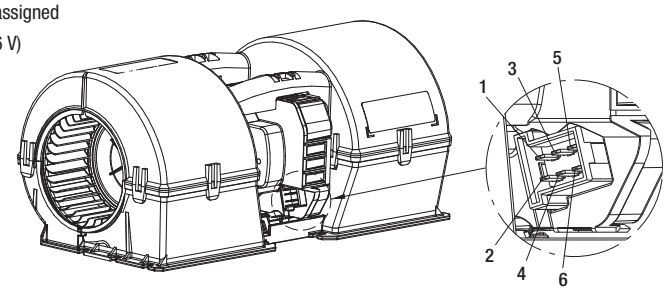




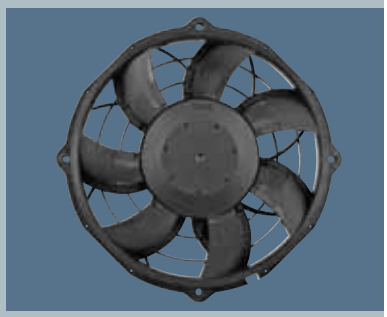
Speed setting

Pin	5	4	3	
60%	H	NC	NC	
80%	NC	H	NC	NC = not assigned
100%	NC	NC	H	H = U_N (26 V)

View connector plug
1 = + UB
2 = GND
3 = PWM/LIN, 100 % Speed
4 = 80 % Speed
5 = 60 % Speed
6 = NC (not assigned)
AMP Junior Power Timer, 6-pole, coded; connection lead (460 mm) with mating plug; part no. 02001-4-1021 (not included in delivery)

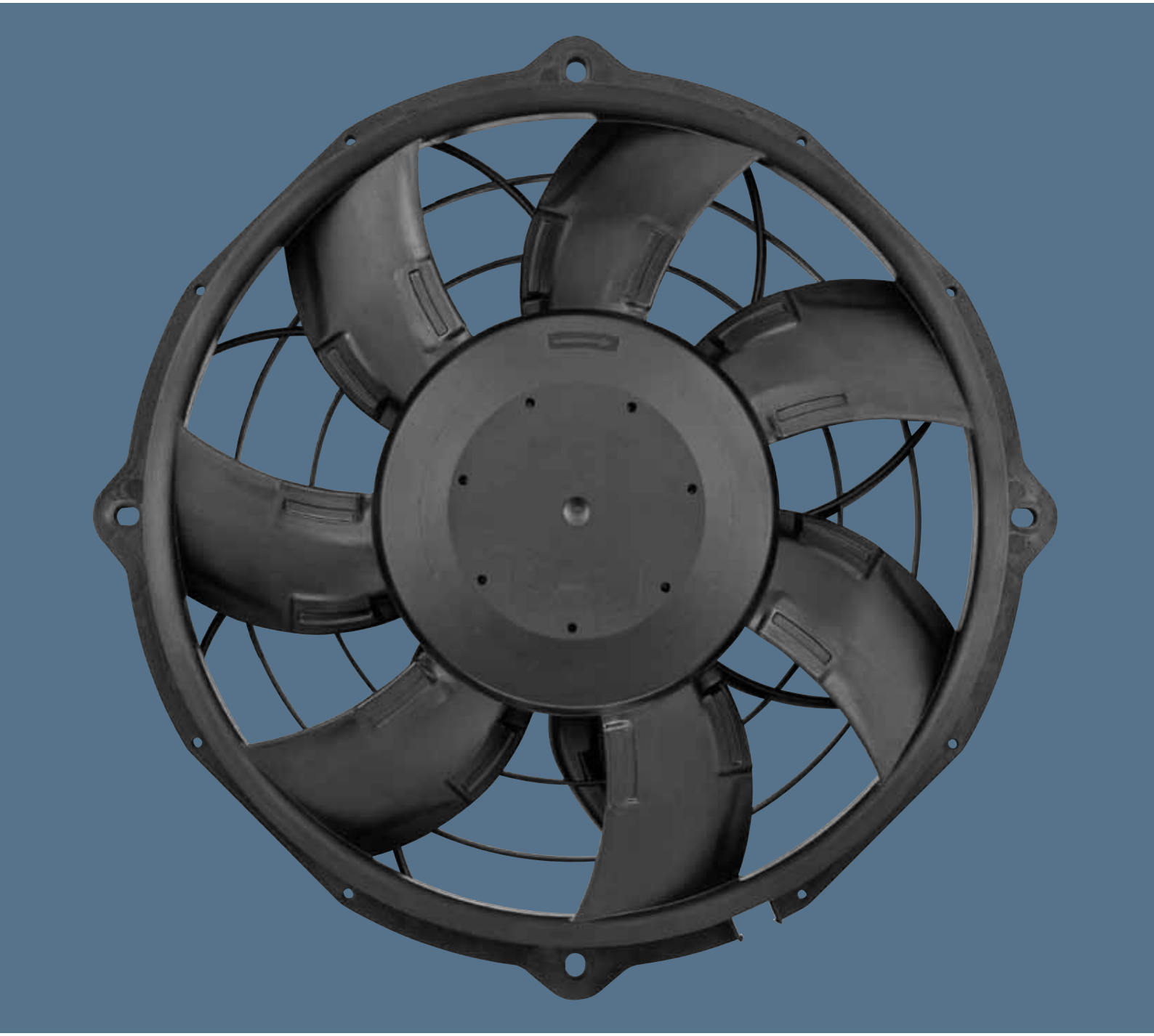








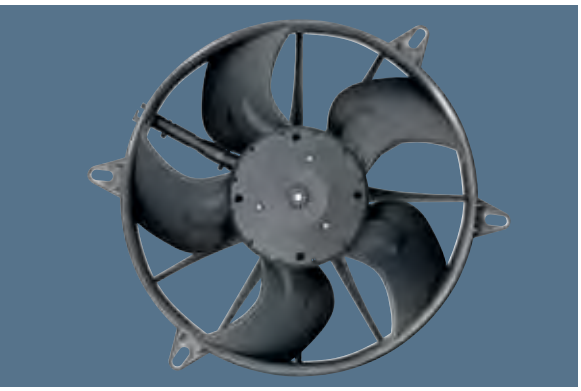
EC axial fans with brushless DC motor **„Premium“ and „Power“**



ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 280



- **Material:** Wall ring: PP plastic, coloured black
  Impeller: PBT plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "V", exhaust over struts
- **Type of protection:** IP 24 KM
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5

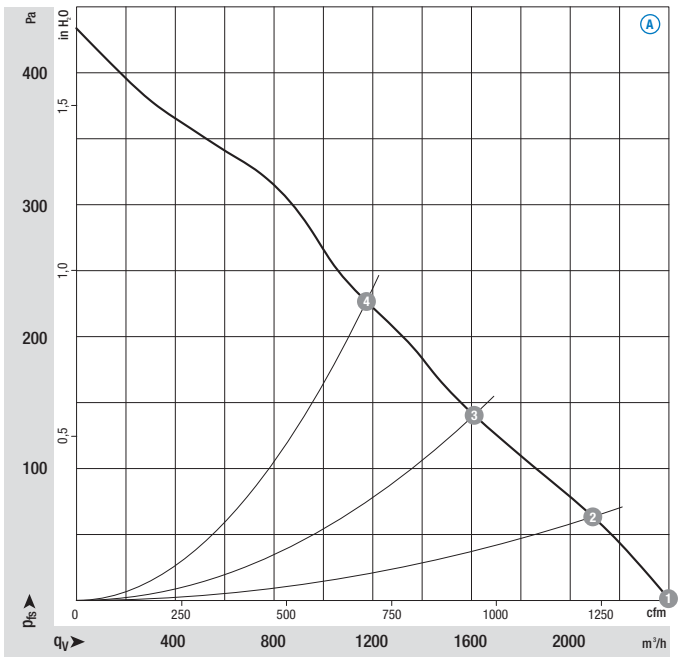
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
W3G280-EQ20 -43[1]	M3G074-CF	Ⓐ	26	16-32	2400	3100	200	7,5	72	-40..+85[2]	2,4	D

subject to alterations

[1] 24-volt variant [2] at free air not recommended for long-term operation at 85 °C

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

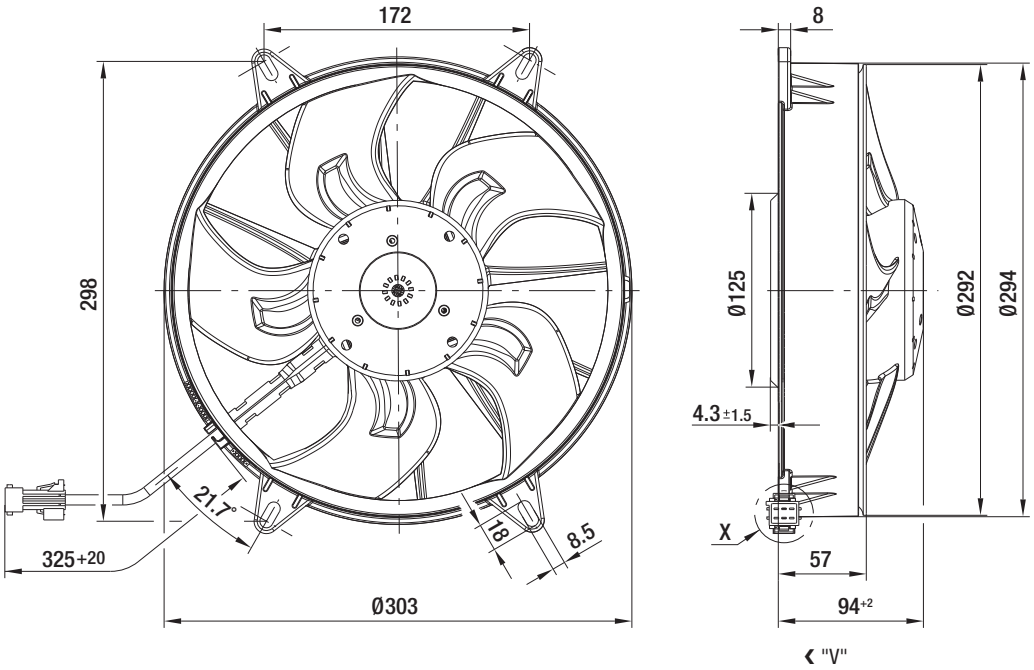
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

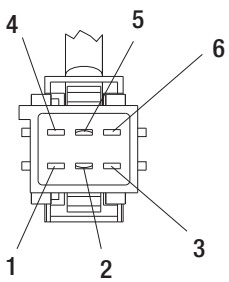
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	3100	200	7,5	72
Ⓐ 2	3085	197	7,6	72
Ⓐ 3	3090	192	7,3	74
Ⓐ 4	3105	213	8,2	76

ebmpapst





View X

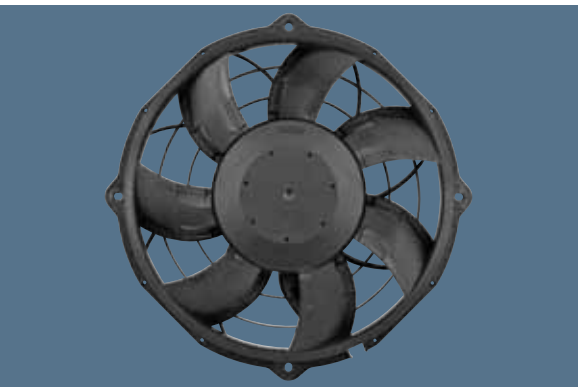
1	= UN	black
2	= GND	brown
3	= PWM/LIN	yellow
4	= INVLIN	orange
5	= LOWER	blue
6	= Diagnostic output	white

AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02002-4-1021 (not included in delivery)

ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 300



- **Material:** Wall ring: PA plastic, coloured black
  Impeller: PA plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "V", exhaust over struts
- **Type of protection:** Motor: IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5
- **Qualified to:** DIN ISO 16750

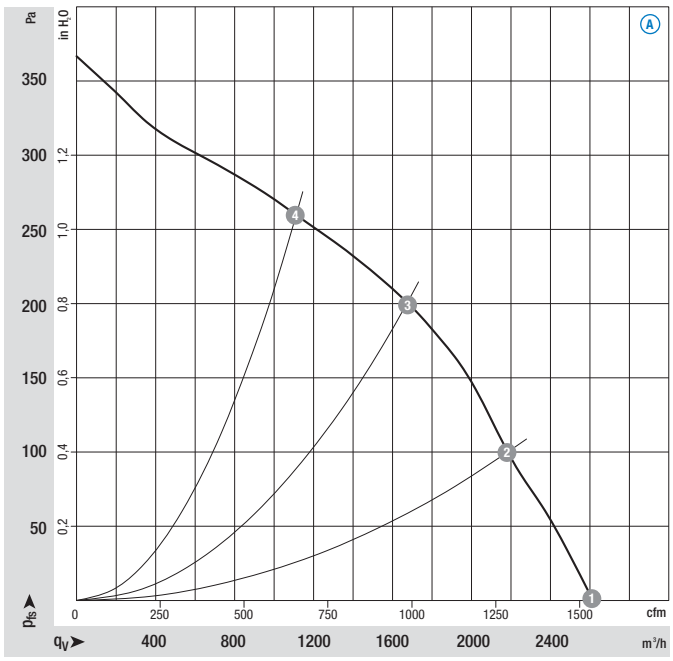
Nominal data

Type	Motor	Curve	Nominal voltage	Nominal voltage range	Flow rate	speed/rpm	Input power	Current draw	Sound pressure level	Perm. amb. temp.	Mass	Electr. connection
			VDC	VDC	m³/h	rpm	W	A	dB(A)	°C	kg	
W3G300-BV12 -41[1]	M3G084-BF	Ⓐ	13	9-16	2610	3200	220	16,7	75	-40..+105[2]	2,0	K

subject to alterations

[1] 12-volt variant [2] over + 85 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

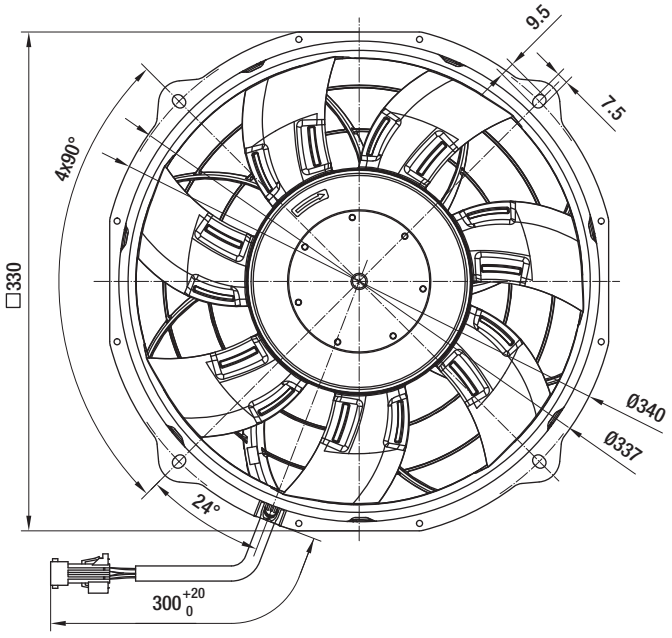
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

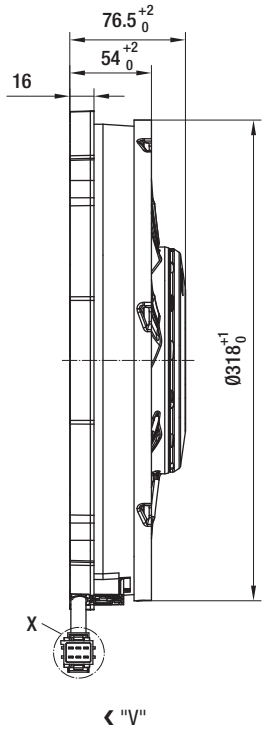
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

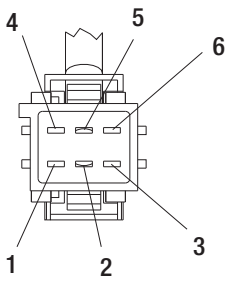
	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	3200	220	16,7	75
Ⓐ 2	3140	235	18,1	75
Ⓐ 3	2960	247	18,9	73
Ⓐ 4	2840	248	19,0	75

ebmpapst





‹ "V"



View X

1	= + UB	black
2	= GND	brown
3	= PWM/LIN*	yellow
4	= NC	(not assigned)
5	= LOWER	blue
6	= Diagnostic output	white

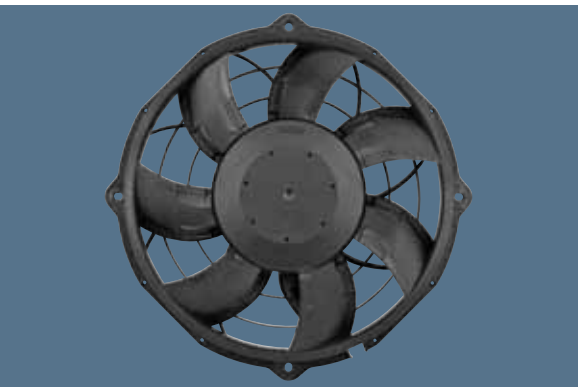
AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02002-4-1021 (not included in delivery)

* optionally LIN-BUS

ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 300



- **Material:** Wall ring: PA plastic, coloured black
  Impeller: PA plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "V", exhaust over struts
- **Type of protection:** Motor: IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5
- **Qualified to:** DIN ISO 16750

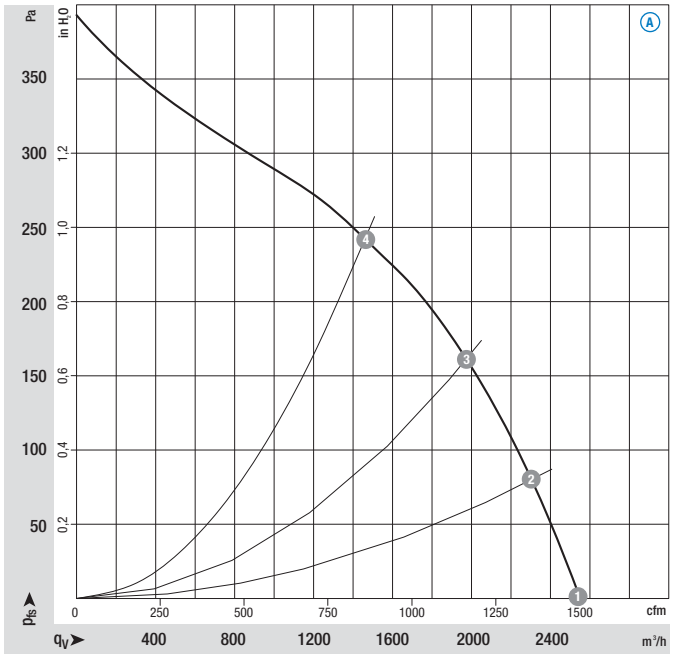
Nominal data

Type	Motor	Curve	Nominal voltage	Nominal voltage range	Flow rate	speed/rpm	Input power	Current draw	Sound pressure level	Perm. amb. temp.	Mass	Electr. connection
			VDC	VDC	m³/h	rpm	W	A	dB(A)	°C	kg	
W3G300-BV24 -01(1)	M3G084-BF	Ⓐ	26	16-32	2570	3160	205	7,90	74	-40..+110(2)	2,0	H

subject to alterations

(1) 24-volt variant (2) over + 95 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

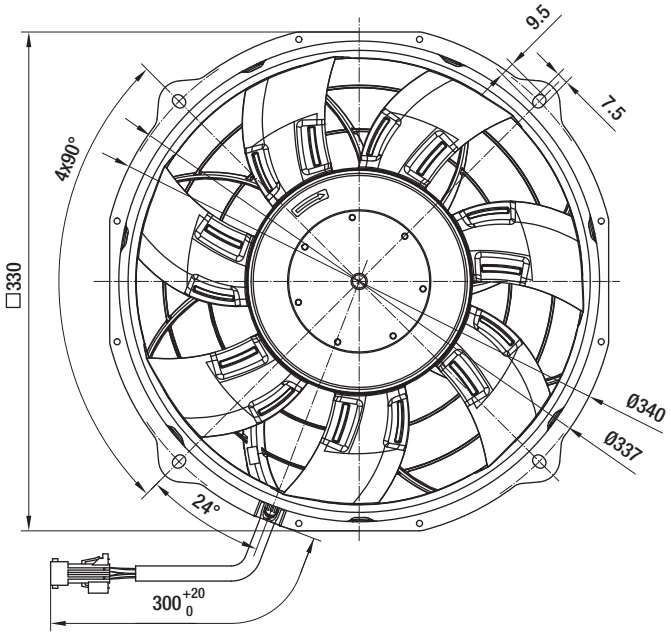
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

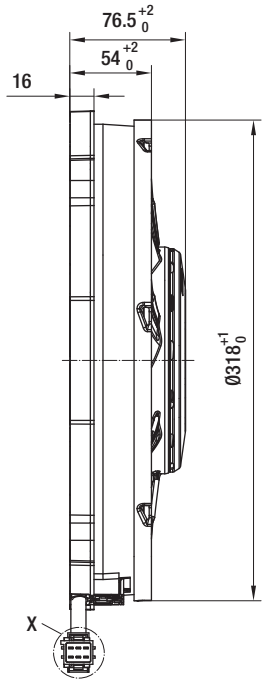
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 58 ff.

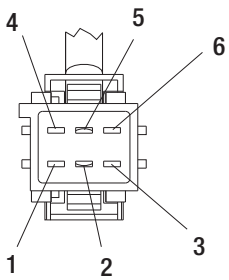
	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	3160	205	7,90	74
Ⓐ 2	3150	216	8,30	73
Ⓐ 3	3085	240	9,20	73
Ⓐ 4	2965	244	9,40	73

ebmpapst





❮ "V"



View X

1	= + UB	black
2	= GND	brown
3	= PWM/LIN*	yellow
4	= INVLIN	orange
5	= LOWER	blue
6	= Diagnostic output	white

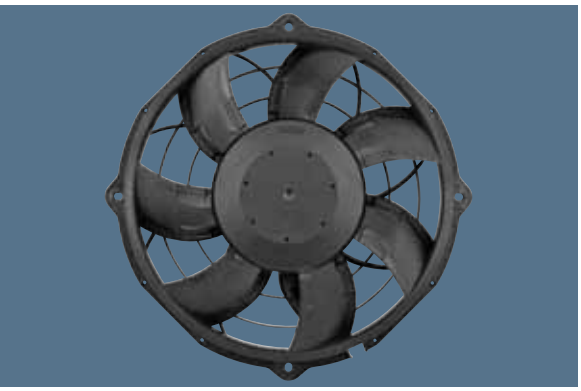
AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02002-4-1021 (not included in delivery)

* optionally LIN-BUS

ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 300



- **Material:** Wall ring: PA plastic, coloured black
  Impeller: PA plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "V", exhaust over struts
- **Type of protection:** Motor: IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5
- **Qualified to:** DIN ISO 16750

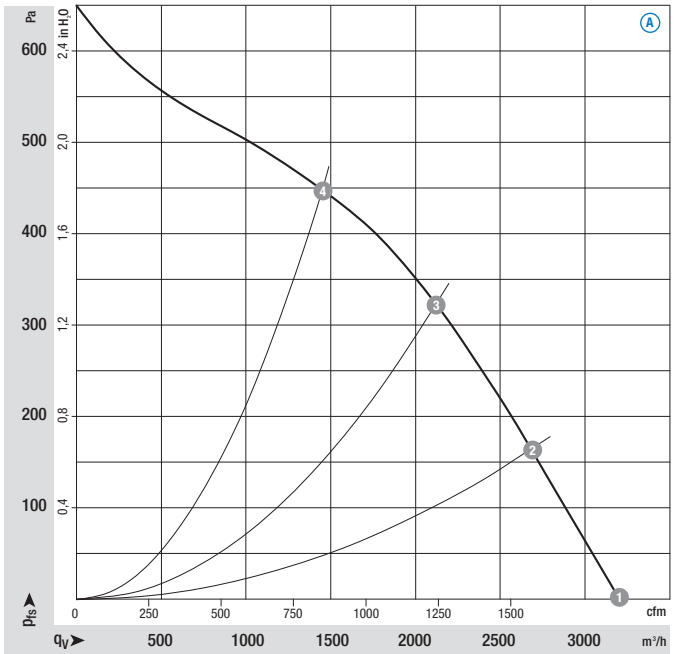
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
W3G300-BV25 -21[1]	M3G084-BF	Ⓐ	26	16-32	3225	3940	380	14,6	79	-40..+110[2]	2,0	H

subject to alterations

[1] 24-volt variant [2] over + 85 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

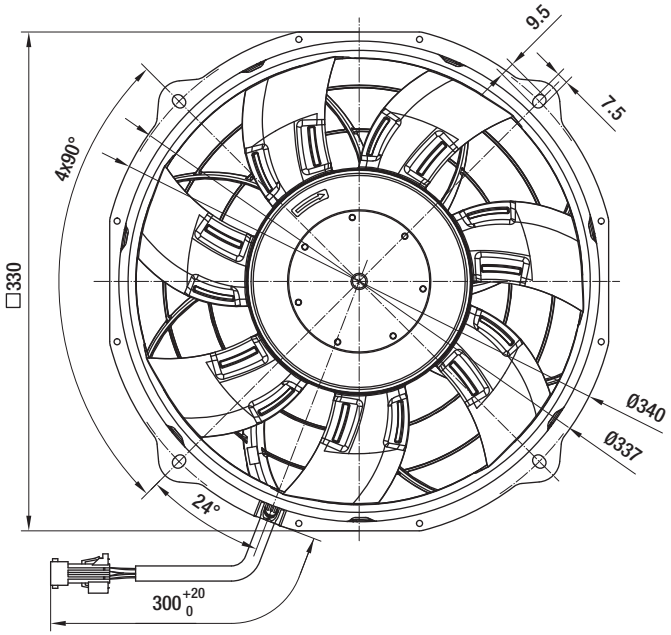
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

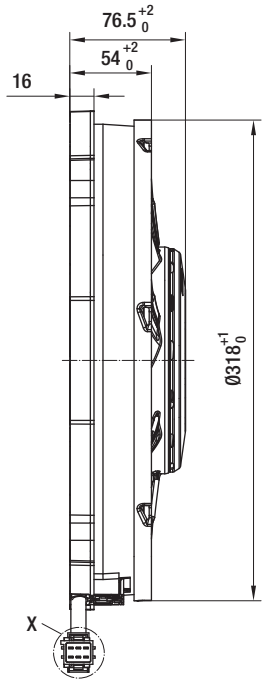
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 58 ff.

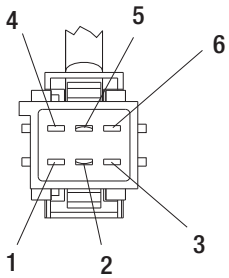
	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	3940	380	14,6	79
Ⓐ 2	3815	408	15,7	79
Ⓐ 3	3715	462	17,7	78
Ⓐ 4	3630	495	19,0	81

ebmpapst





‹ "V"



View X

1	= + UB	black
2	= GND	brown
3	= PWM/LIN*	yellow
4	= INVLIN	orange
5	= LOWER	blue
6	= Diagnostic output	white

AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02002-4-1021 (not included in delivery)

* optionally LIN-BUS

ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 300



- **Material:** Wall ring: PP plastic, coloured black
  Impeller: PBT plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "A", intake over struts
- **Type of protection:** IP 24 KM
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5

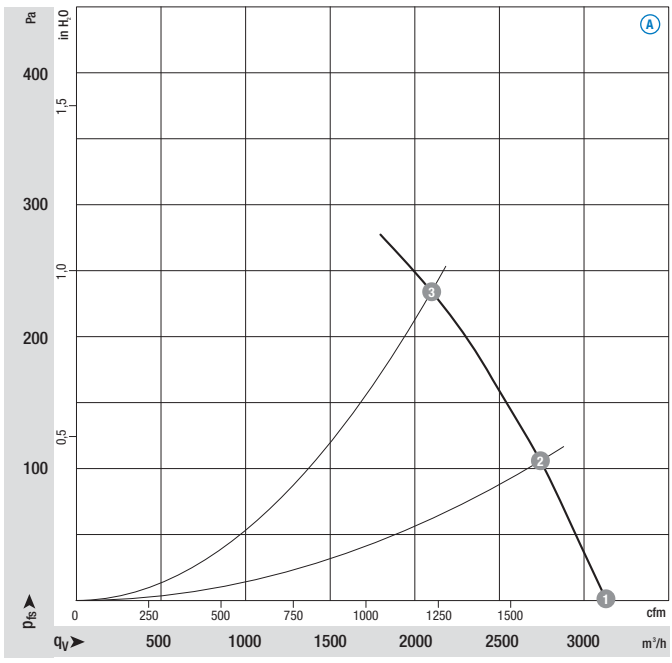
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Max. back pressure Pa	Perm. amb. temp. °C	Mass kg	Electr. connection
W3G300-ER38 -45[1]	M3G074-CF	A	27,5	16-32	3135	3320	335	12,2	87	275	-40..+85[2]	2,5	C

subject to alterations

[1] 24-volt variant [2] at free air not recommended for long-term operation at 85 °C

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

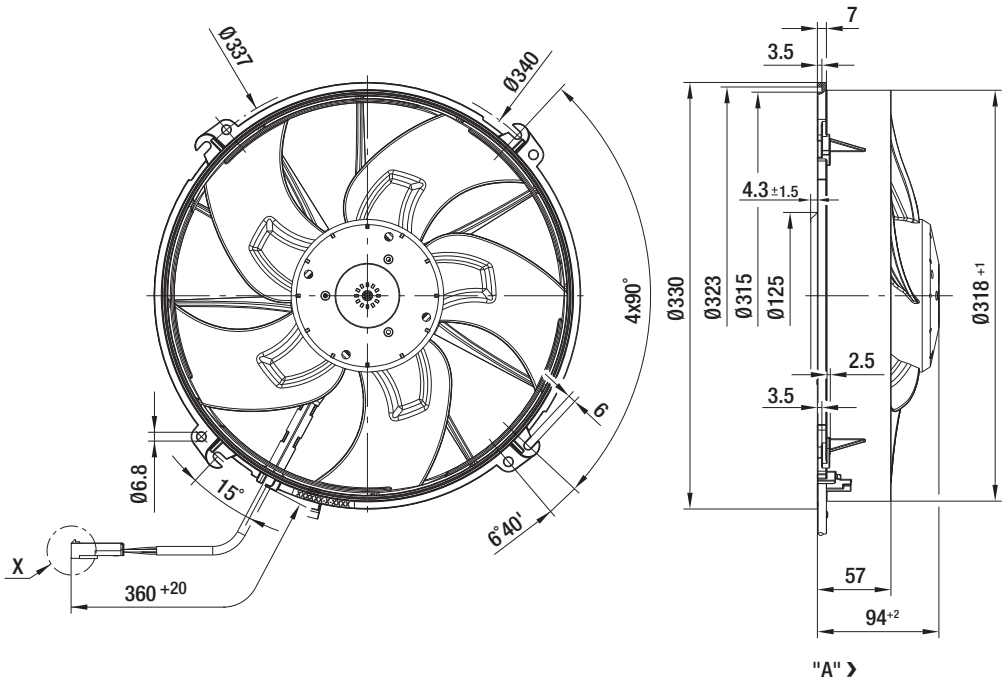
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

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 58 ff.

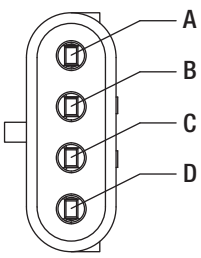
	n rpm	P_{ed} W	I A	L_pA dB(A)
A 1	3320	335	12,2	87
A 2	3295	354	12,8	85
A 3	3255	367	13,3	86

ebmpapst



Bushing on customer side:

Housing:	Packard 12015797
Pins:	Packard 12089188 Packard 12124580
Sealings:	Packard 15324982 Packard 15324983



View X

A = UN	rde
B = LIN	blue
C = CGND	white
D = GND	black

ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 385



- **Material:** Wall ring: PA plastic, coloured black
  Impeller: PA plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "V", exhaust over struts
- **Type of protection:** Motor: IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5
- **Qualified to:** DIN ISO 16750

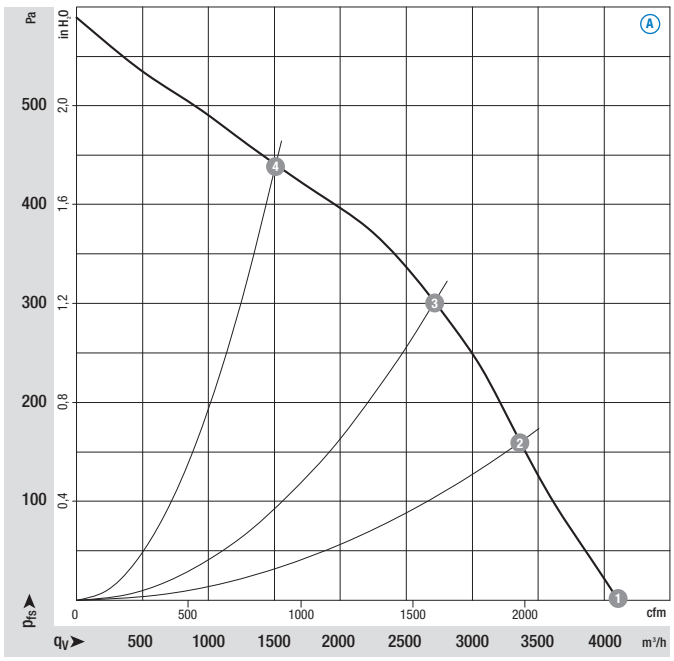
Nominal data

Type	Motor	Curve	Nominal voltage	Nominal voltage range	Flow rate	speed/rpm	Input power	Current draw	Sound pressure level	Perm. amb. temp.	Mass	Electr. connection
			VDC	VDC	m³/h	rpm	W	A	dB(A)	°C	kg	
W3G385-CT53 -61[1]	M3G084-CF	Ⓐ	13	9-16	4110	3100	445	34,0	81	-40..+105[2]	3,3	L

subject to alterations

[1] 12-volt variant [2] over + 70 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

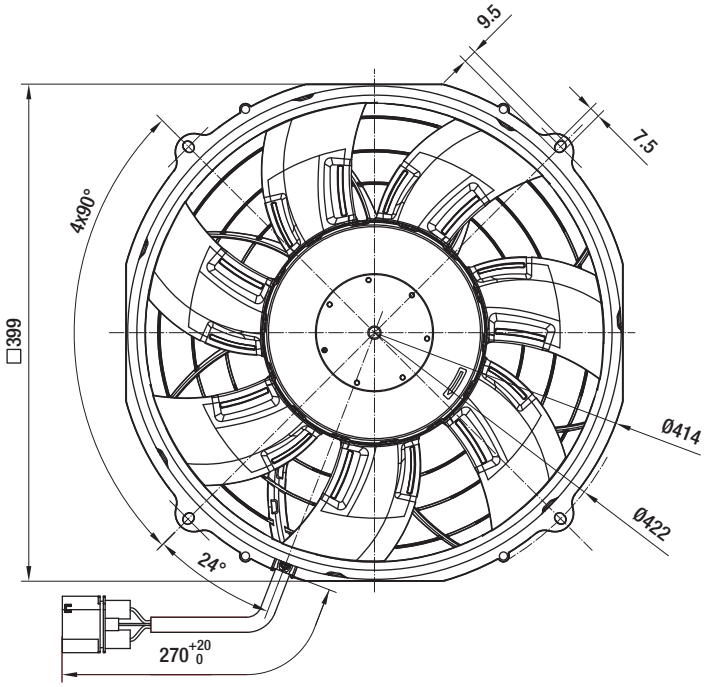
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

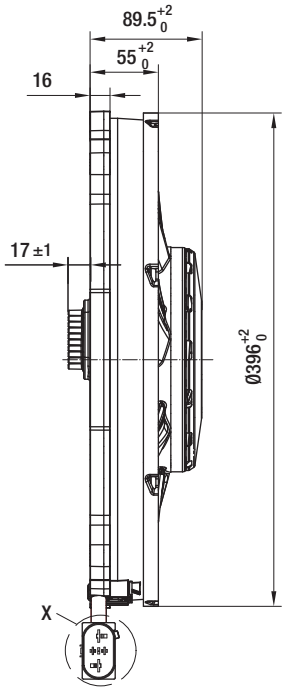
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 58 ff.

	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	3100	445	34,0	81
Ⓐ 2	3000	487	37,6	80
Ⓐ 3	2930	544	41,9	78
Ⓐ 4	2815	590	45,6	81

ebmpapst

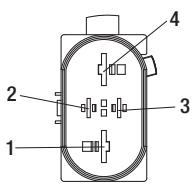




‹ "V"

Bushing on customer side:

Housing:		FCI 30432101
Pins:	9,5 mm	FCI 60070461
	4,8 mm	FCI 60040431
Sealings:		FCI 60993301
		FCI 60992607



View X

1	= + UB	black
2	= Diagnostic output*	white
3	= PWM/LIN	yellow
4	= GND	brown

* optionally LIN-BUS

ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 385



- **Material:** Wall ring: PA plastic, coloured black
  Impeller: PA plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "V", exhaust over struts
- **Type of protection:** Motor: IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5
- **Qualified to:** DIN ISO 16750

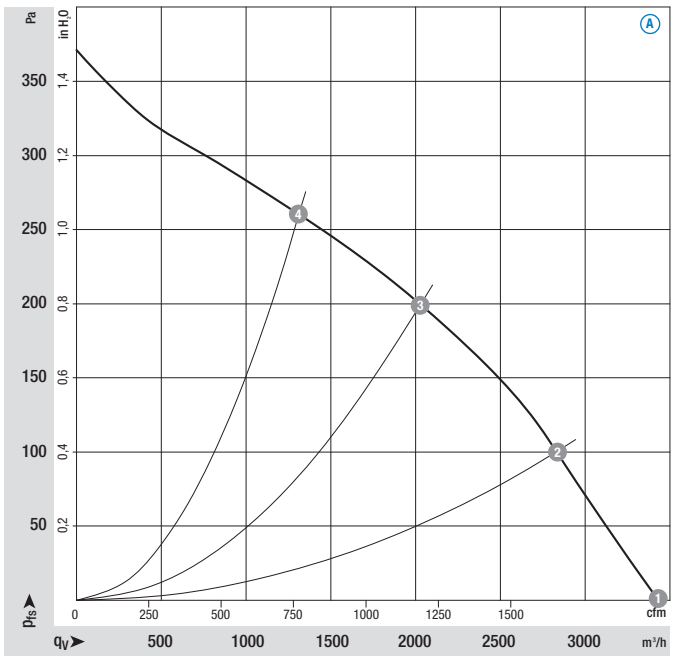
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
W3G385-BV44 -01[1]	M3G084-BF	Ⓐ	26	16-32	3425	2600	260	10,0	76	-40..+110[2]	2,7	H

subject to alterations

[1] 24-volt variant [2] over + 95 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

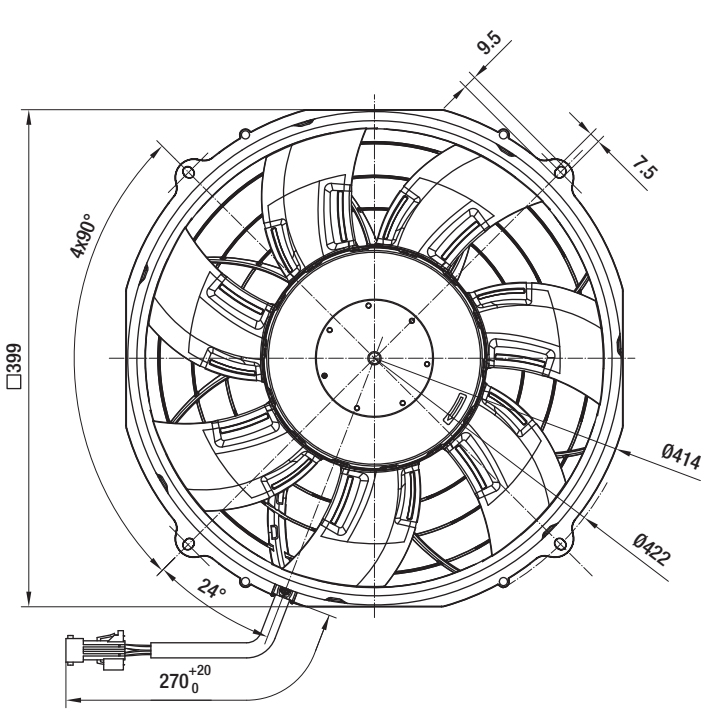
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

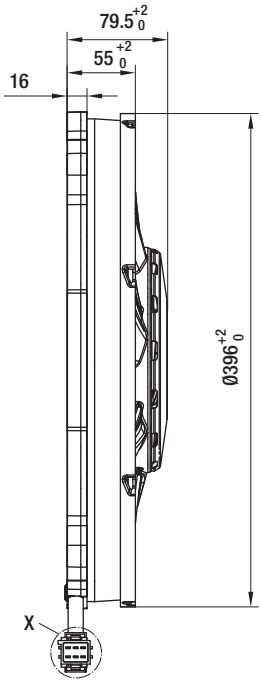
With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 58 ff.

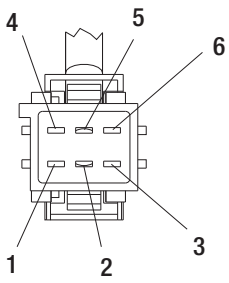
	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	2600	260	10,0	76
Ⓐ 2	2505	272	10,5	74
Ⓐ 3	2325	273	10,5	73
Ⓐ 4	2215	274	10,5	74

ebmpapst





‹ "V"



View X

1	= + UB	black
2	= GND	brown
3	= PWM/LIN*	yellow
4	= INVLIN	orange
5	= LOWER	blue
6	= Diagnostic output	white

AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02002-4-1021 (not included in delivery)

* optionally LIN-BUS

ErP2015 EXCEEDS THE NORM

EC axial fans

with brushless DC motor, Ø 385



- **Material:** Wall ring: PA plastic, coloured black
  Impeller: PA plastic, coloured black (conforms to UL 94 HB)
- **Direction of rotation:** Clockwise, seen on rotor
- **Direction of air flow:** "V", exhaust over struts
- **Type of protection:** Motor: IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, locked-rotor protection, load dump protection, under-voltage detection
- **EMC requirements:** VDE 0879-2, interference suppression grade 5
- **Qualified to:** DIN ISO 16750

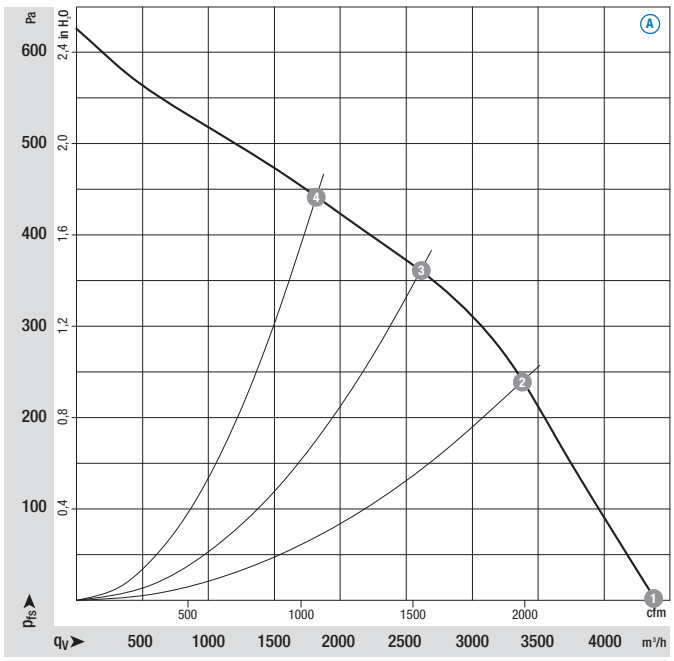
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
W3G385-CT65 -21[1]	M3G084-CF	Ⓐ	26	16-32	4375	3300	525	20,0	83	-40..+110[2]	3,1	L

subject to alterations

[1] 24-volt variant [2] over + 85 °C with power derating

Curves



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

Suction-side noise levels: L_pA measured at 1 m distance to fan axis

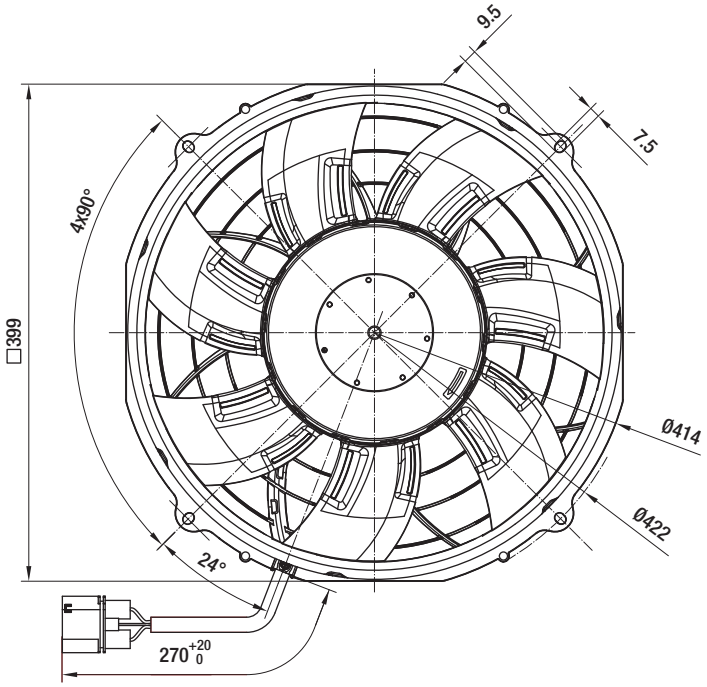
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

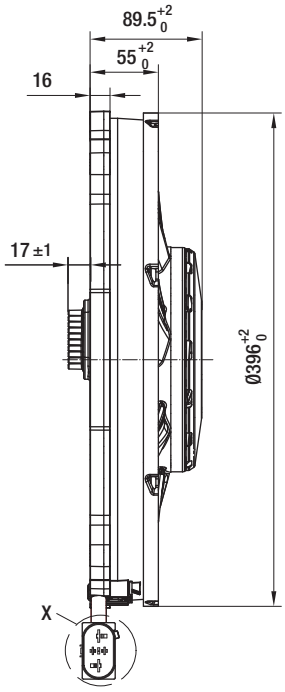
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 58 ff.

	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	3300	525	20,0	83
Ⓐ 2	3180	615	23,7	81
Ⓐ 3	3050	610	23,5	80
Ⓐ 4	2920	610	23,6	80

ebmpapst

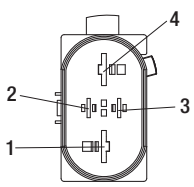




‹ "V"

Bushing on customer side:

Housing:		FCI 30432101
Pins:	9,5 mm	FCI 60070461
	4,8 mm	FCI 60040431
Sealings:		FCI 60993301
		FCI 60992607



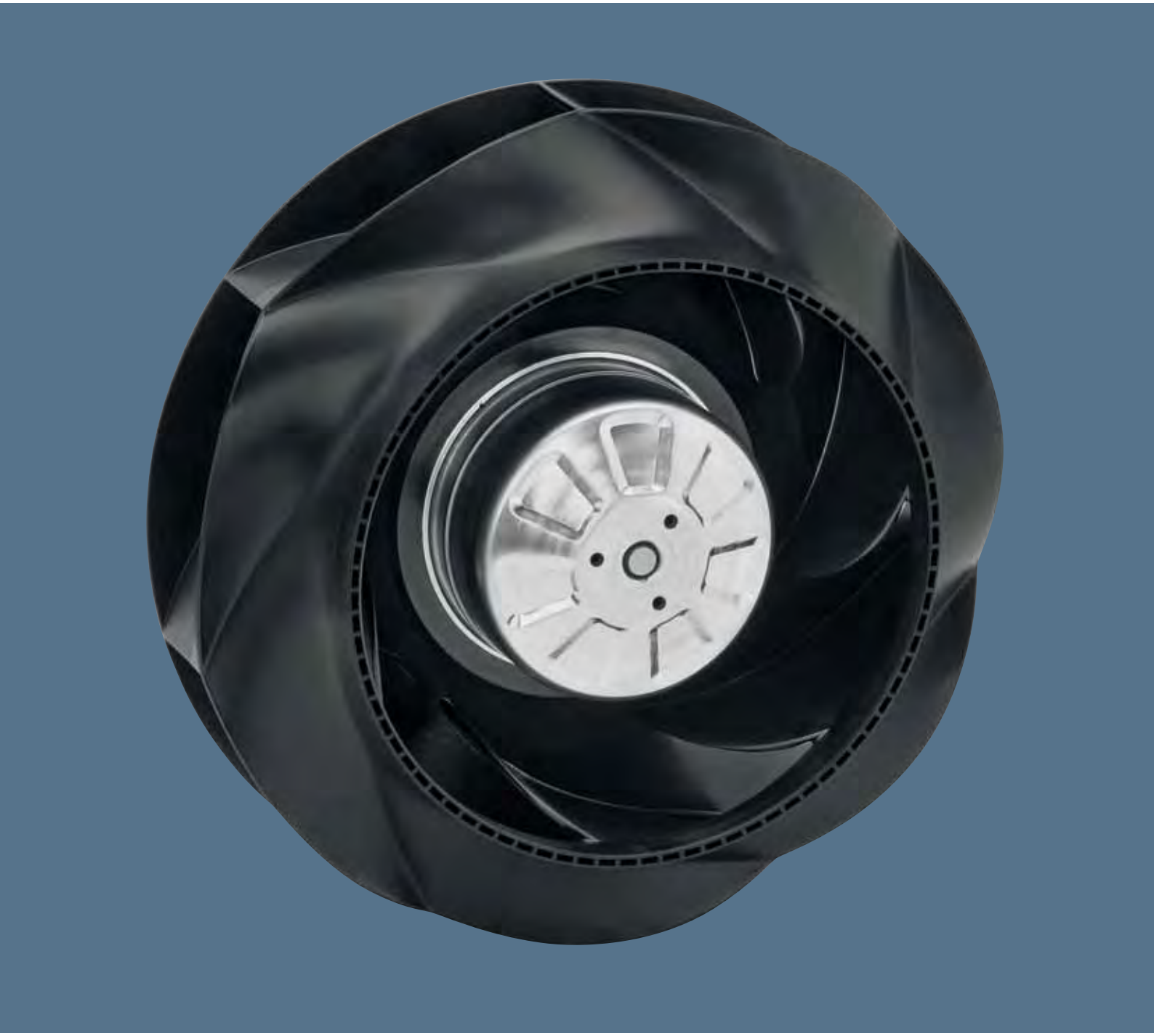
View X

1	= + UB	black
2	= Diagnostic output*	white
3	= PWM/LIN	yellow
4	= GND	brown

* optionally LIN-BUS



EC centrifugal fans - RadiCal backward curved



ErP2015 EXCEEDS THE NORM

EC centrifugal fan RadiCal

backward curved, Ø 220



- **Material:** Impeller: Plastic PA 6.6 GV, coloured black
  Electronics housing: Die-cast aluminium, coated in black
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** Motor: IP 24, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position/condensate discharges:**
  Rotor on bottom with condensate discharge holes is standard
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** reverse polarity and locked-rotor protection
- **Technical features:** Control input 0-10 VDC / PWM, tach output
- **Mounting situation:** The parameters of the specific installation situation must be co-ordinated with ebm-papst!

preliminary data

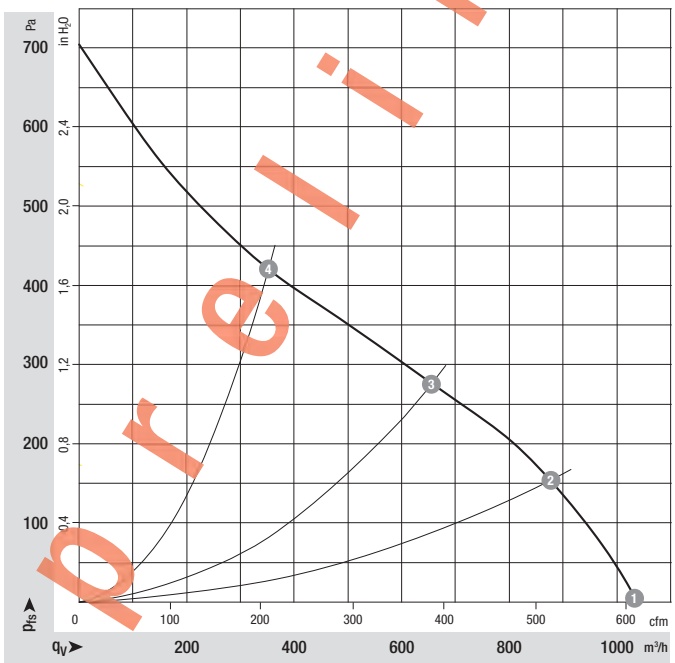
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
R1G 220-RD02 -02[1]	M1G074-BF	Ⓐ	24	16-28	1030	2975	104	5,0	---	-40..+60	1,4	E

subject to alterations

[1] Also possible as 12-volt variant

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_pA measured at 1 m distance to fan axis

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

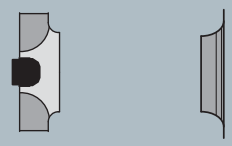
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 58 ff.

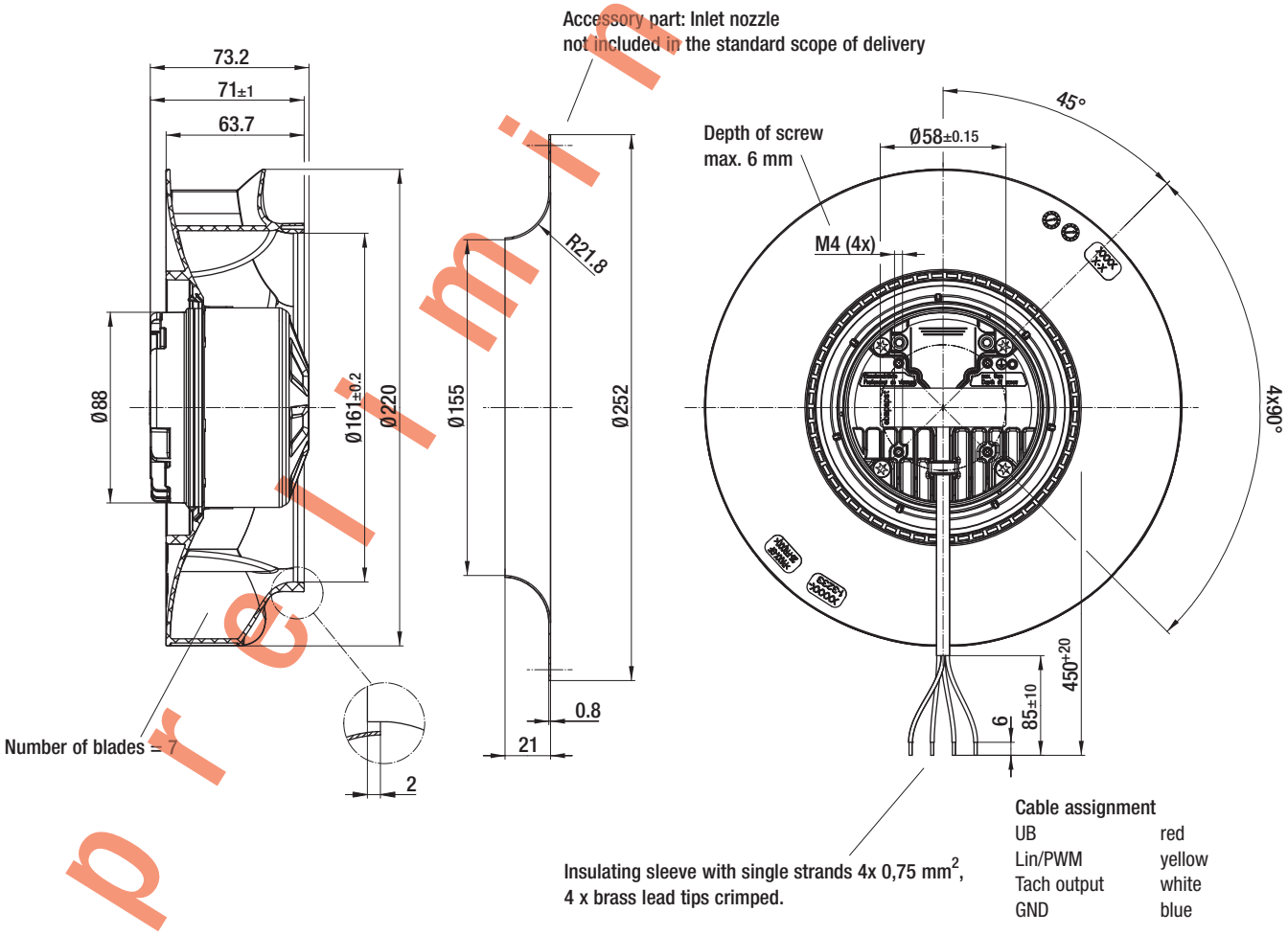
	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	2975	104	5,0	---
Ⓐ 2	2890	105	5,1	---
Ⓐ 3	2775	108	5,1	---
Ⓐ 4	2920	106	5,1	---

ebmpapst

preliminary data



Type	Inlet nozzle
R1G 220-RD02 -02	09609-2-4013



ErP2015 EXCEEDS THE NORM

EC centrifugal fan RadiCal

backward curved, Ø 250



- **Material:** Impeller: Plastic PA 6.6 GV, coloured black
  Electronics housing: Die-cast aluminium, coated in black
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** Motor: IP 24, Electronics: IP 66 / 69 K
- **Insulation class:** "B" in accordance with EN 60335-1
- **Mounting position/condensate discharges:**
  Rotor on bottom with condensate discharge holes is standard
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** reverse polarity and locked-rotor protection
- **Technical features:** Control input 0-10 VDC / PWM, tach output
- **Mounting situation:** The parameters of the specific installation situation must be co-ordinated with ebm-papst!

preliminary data

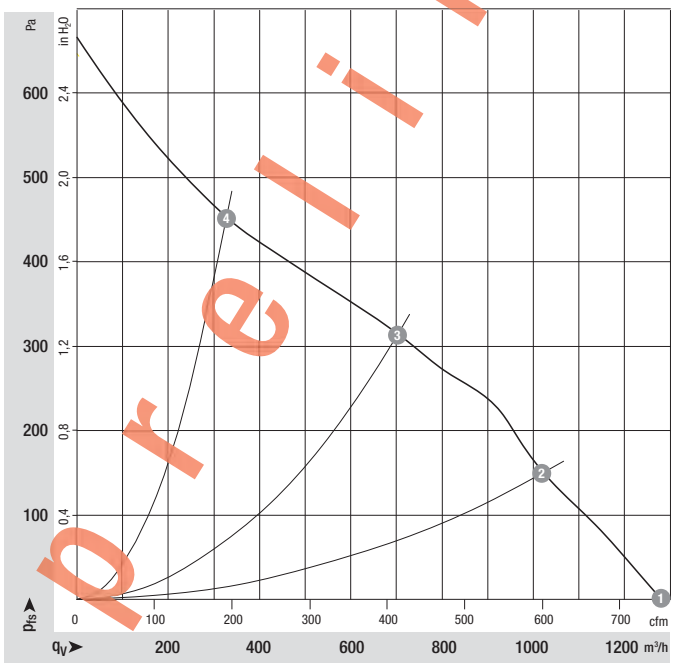
Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
R1G 250-RC69 -02[1]	M1G074-CF	Ⓐ	24	16-28	1280	2440	105	4,9	---	-40..+60	1,9	E

subject to alterations

[1] Also possible as 12-volt variant

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_pA measured at 1 m distance to fan axis

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

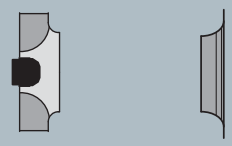
With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 58 ff.

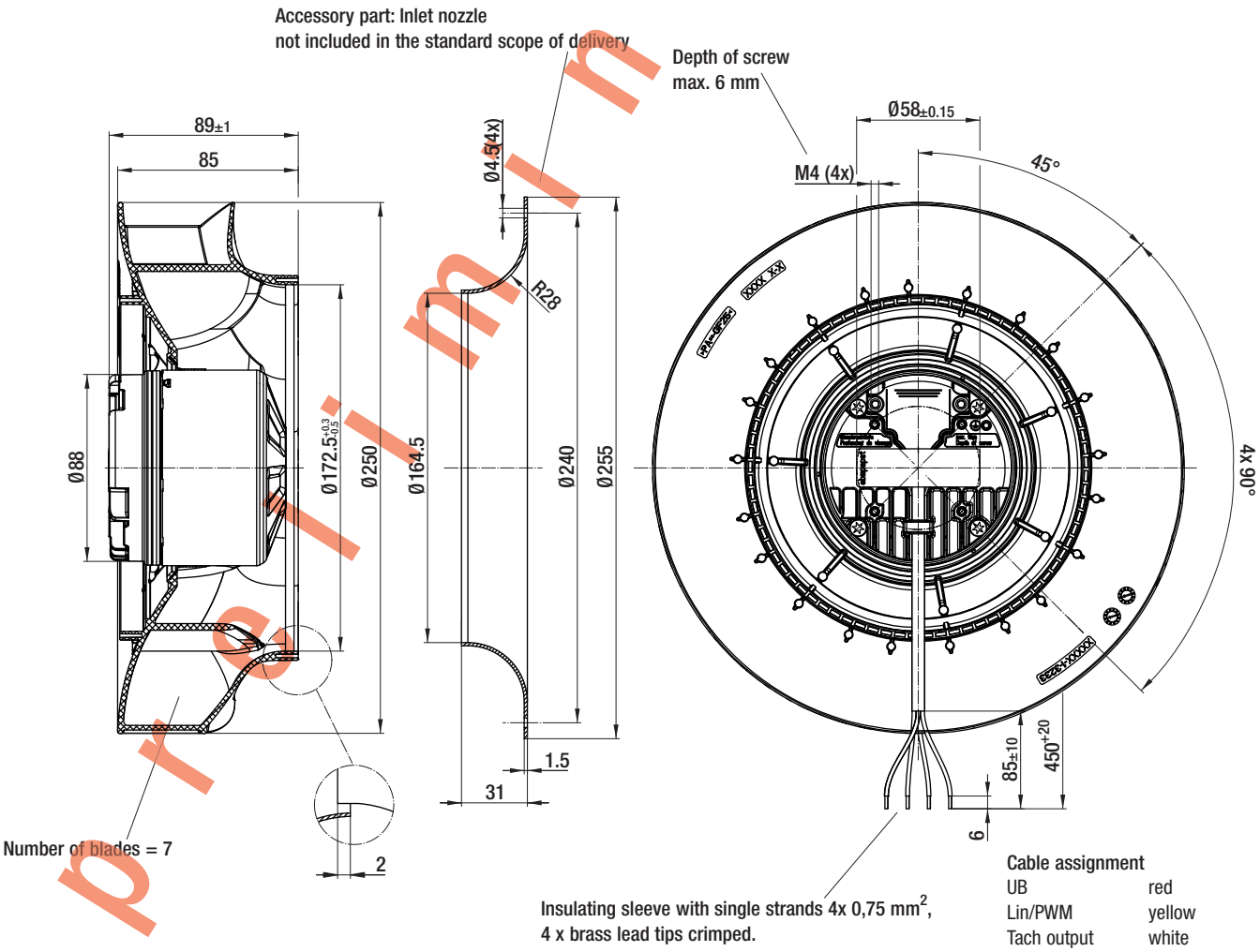
	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	2440	105	4,9	---
Ⓐ 2	2275	108	5,2	---
Ⓐ 3	2255	110	5,2	---
Ⓐ 4	2425	105	4,9	---

ebmpapst

preliminary data



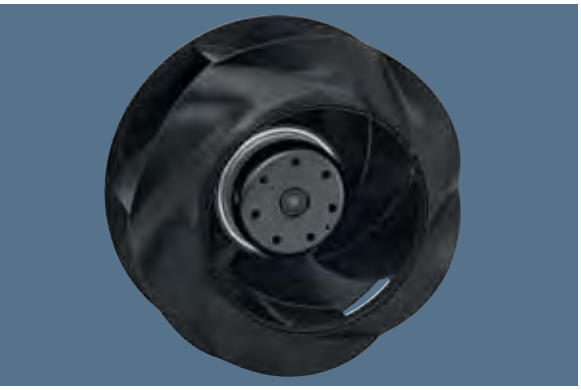
Type	Inlet nozzle
R1G 250-RC69 -02	96359-2-4013



ErP2015 EXCEEDS THE NORM

EC centrifugal fan RadiCal

backward curved, Ø 280



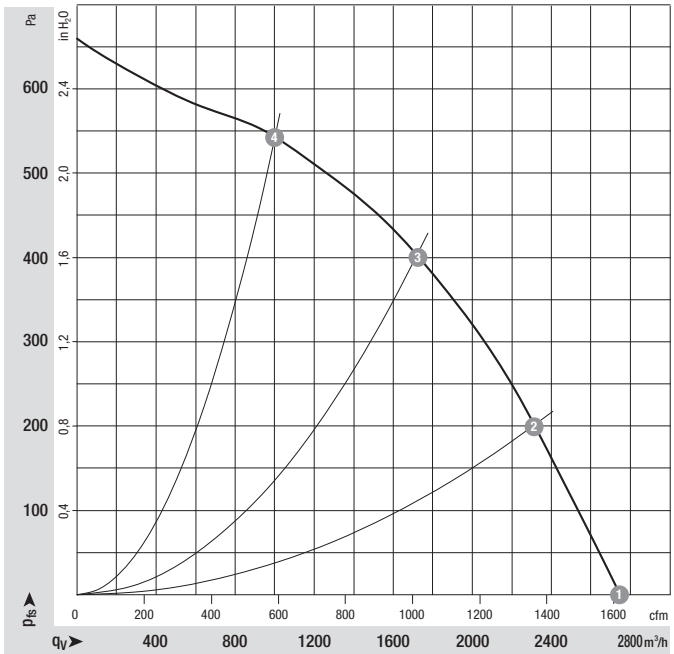
- **Material:** Impeller: Plastic PA, coloured black (conforms to UL 94 V0)
  Rotor: Coated in black
  Electronics housing: Die-cast aluminium, coated in black
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** Motor: IP 24 KM, Electronics: IP 66 / 69 K
- **Insulation class:** “B” in accordance with EN 60335-1
- **Mounting position:** Any
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings
- **Motor protection:** Overtemperature protection, reverse polarity and locked-rotor protection, load dump protection, under-voltage detection
- **Qualified to:** DIN ISO 16750

Nominal data

Type	Motor	Curve	Nominal voltage VDC	Nominal voltage range VDC	Flow rate m³/h	speed/rpm rpm	Input power W	Current draw A	Sound pressure level dB(A)	Perm. amb. temp. °C	Mass kg	Electr. connection
R3G 280-RU26 -81	M3G084-CF	Ⓐ	26	16-32	2750	2350	252	10,5	72	-40..+60	2,8	H

subject to alterations

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_pA measured at 1 m distance to fan axis

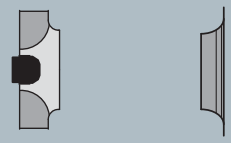
The acoustic values given are only valid under the measurment conditions listed and may vary depending on the installation situation.

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 58 ff.

	n rpm	P_{ed} W	I A	L_pA dB(A)
Ⓐ 1	2350	252	10,5	72
Ⓐ 2	2300	300	12,5	68
Ⓐ 3	2265	328	13,7	68
Ⓐ 4	2315	298	12,4	69

ebmpapst



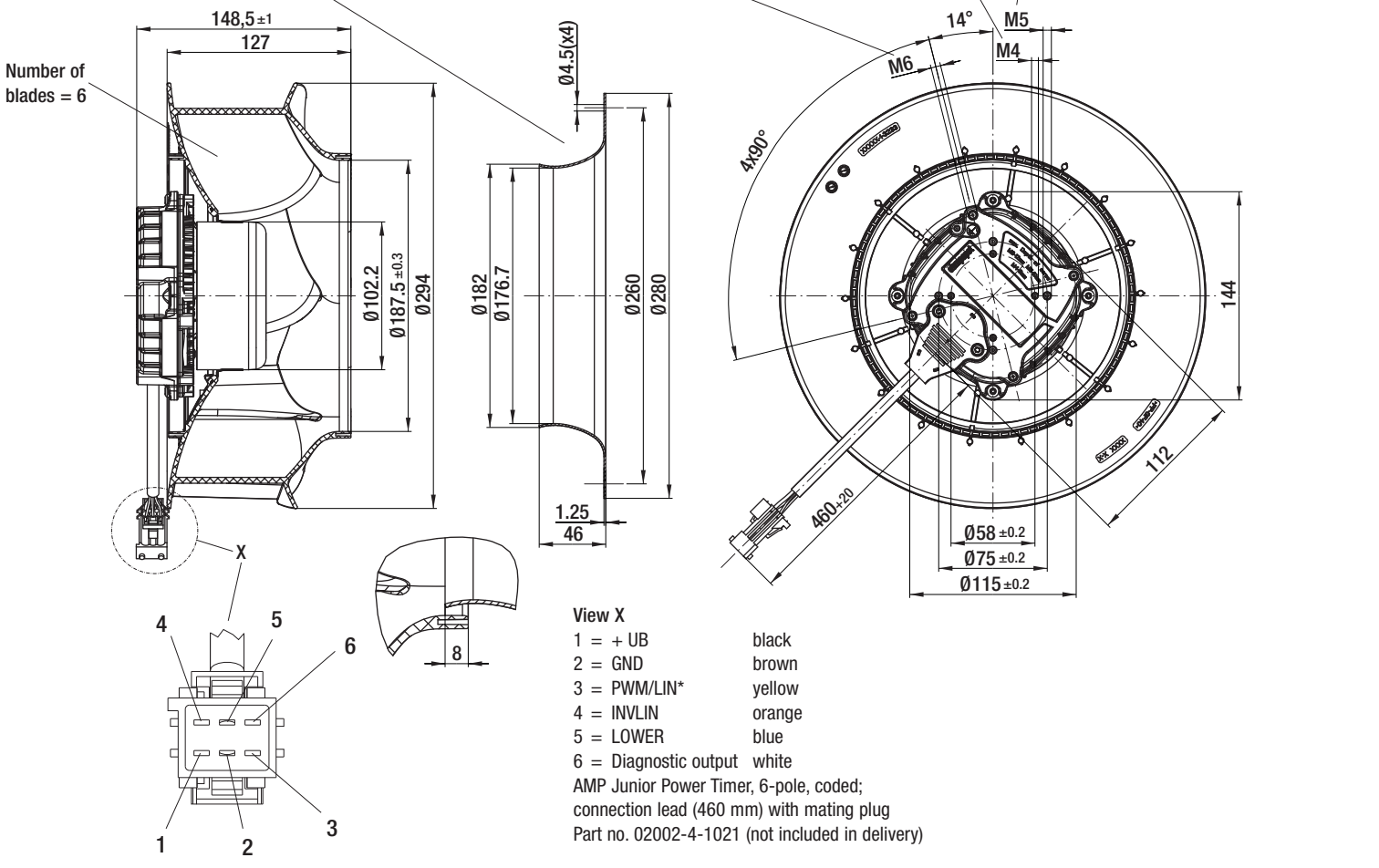
Type	Inlet nozzle
R3G 280-RU26 -81	28000-2-4013

Accessory part: Inlet nozzle
not included in the standard scope of delivery

Depth of screw max. 12 mm
(core removing hole prepared for self-tapping screw)

Depth of screw max. 8 mm
(core removing hole prepared for self-tapping screw)

Depth of screw max. 10 mm
(core removing hole prepared for self-tapping screw)



View X

1	= + UB	black
2	= GND	brown
3	= PWM/LIN*	yellow
4	= INVLIN	orange
5	= LOWER	blue
6	= Diagnostic output	white

AMP Junior Power Timer, 6-pole, coded;
connection lead (460 mm) with mating plug
Part no. 02002-4-1021 (not included in delivery)

* optionally LIN-BUS

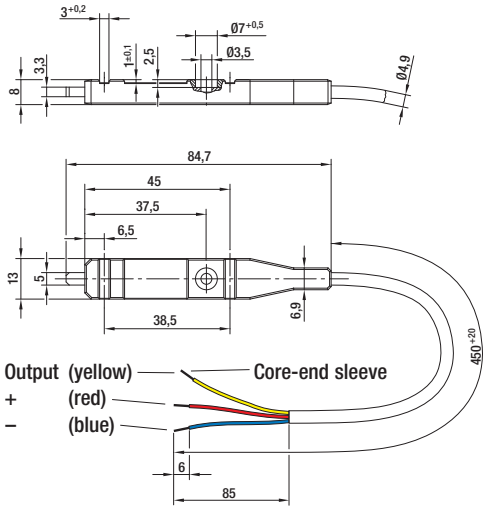
Temperature control module



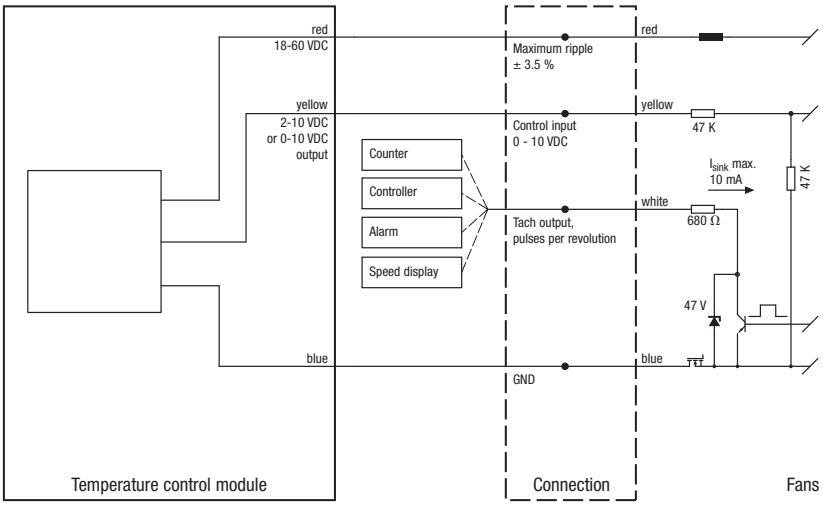
– **Type of protection:** IP42

Nominal data	Nominal voltage	Current draw	Output voltage	Output current	Output impedance	Temperature control range	Mass
Part no.	**VDC**	**mA**	**VDC**	**mA**	**kΩ**	**°C**	**kg**
50002-1-0174	18-60	10	2-10	0,1	6,8	+30..+55	0,02
50003-1-0174	18-60	10	0-10	0,1	6,8	+10..+45	0,02

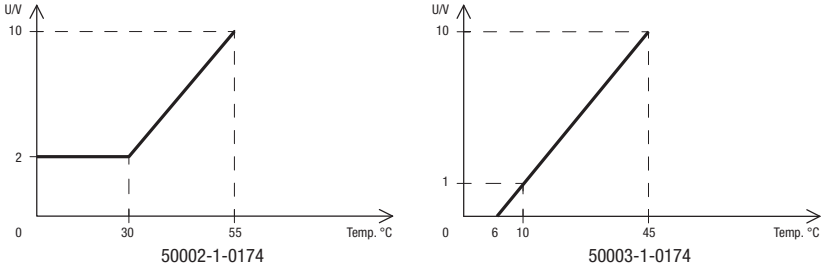
subject to alterations



– **Electr. connection:**



– **Control function:** Both designs have “cooling” as control function



Tolerance ±3 K

ebmpapst

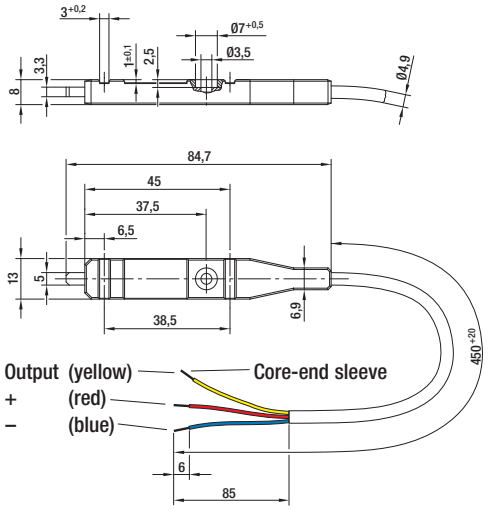
Temperature sensor



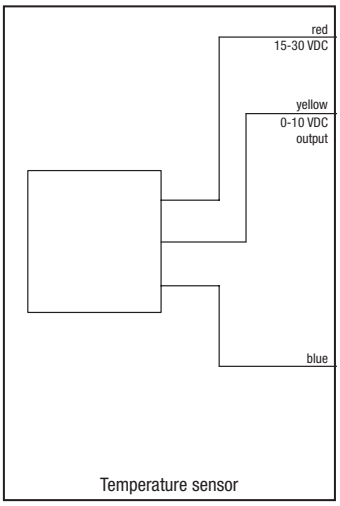
– **Type of protection:** IP42

Nominal data	Nominal voltage	Current draw	Output voltage	Output current	Output impedance	Temperature measuring range	Mass
Part no.	**VDC**	**mA**	**VDC**	**mA**	**kΩ**	**°C**	**kg**
50005-1-0174	15-30	10	0-10	1,0	1,1	-20..+80	0,02

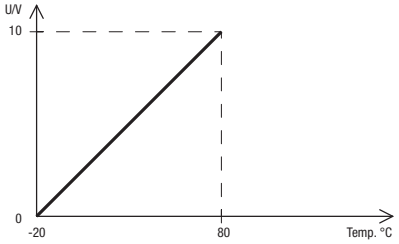
subject to alterations



– **Electr. connection:**

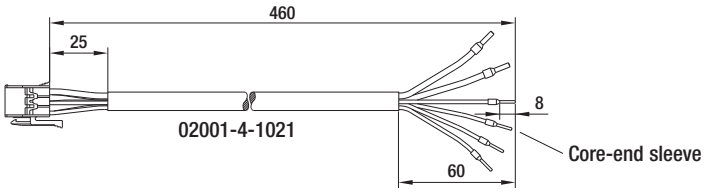


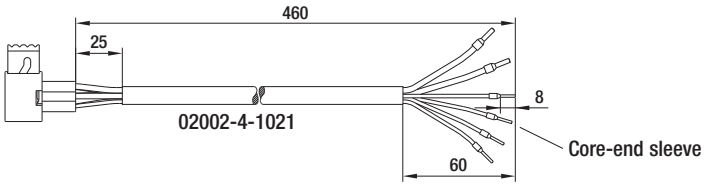
– **Output voltage depending on temperature:**



Tolerance ±3 K

Accessories





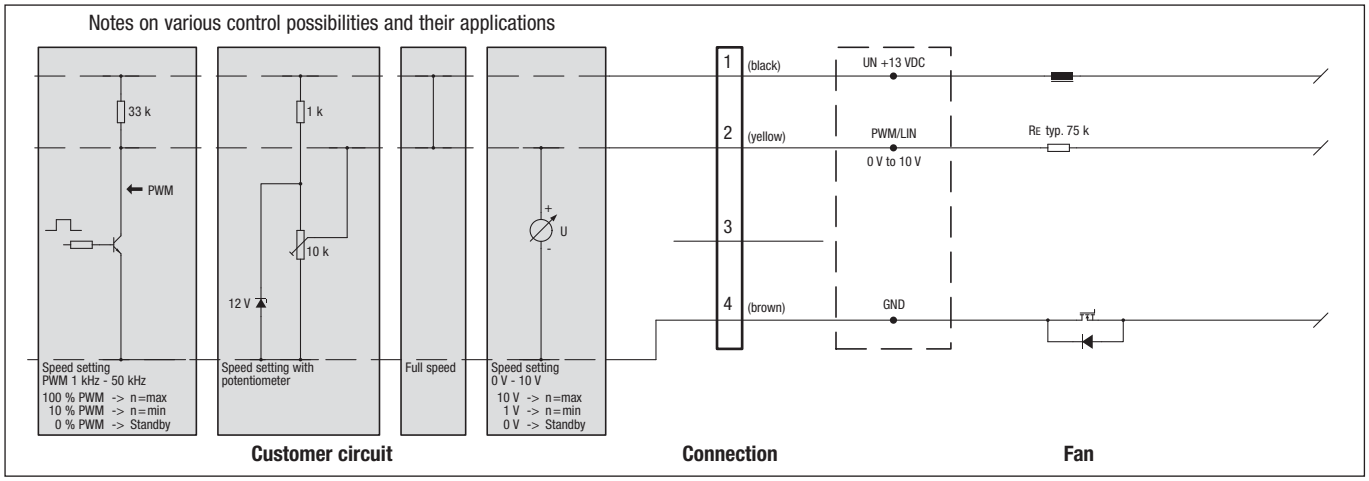
Connection leads

Part no.	Application
02001-4-1021	EC dual centrifugal blower
02002-4-1021	EC axial fan

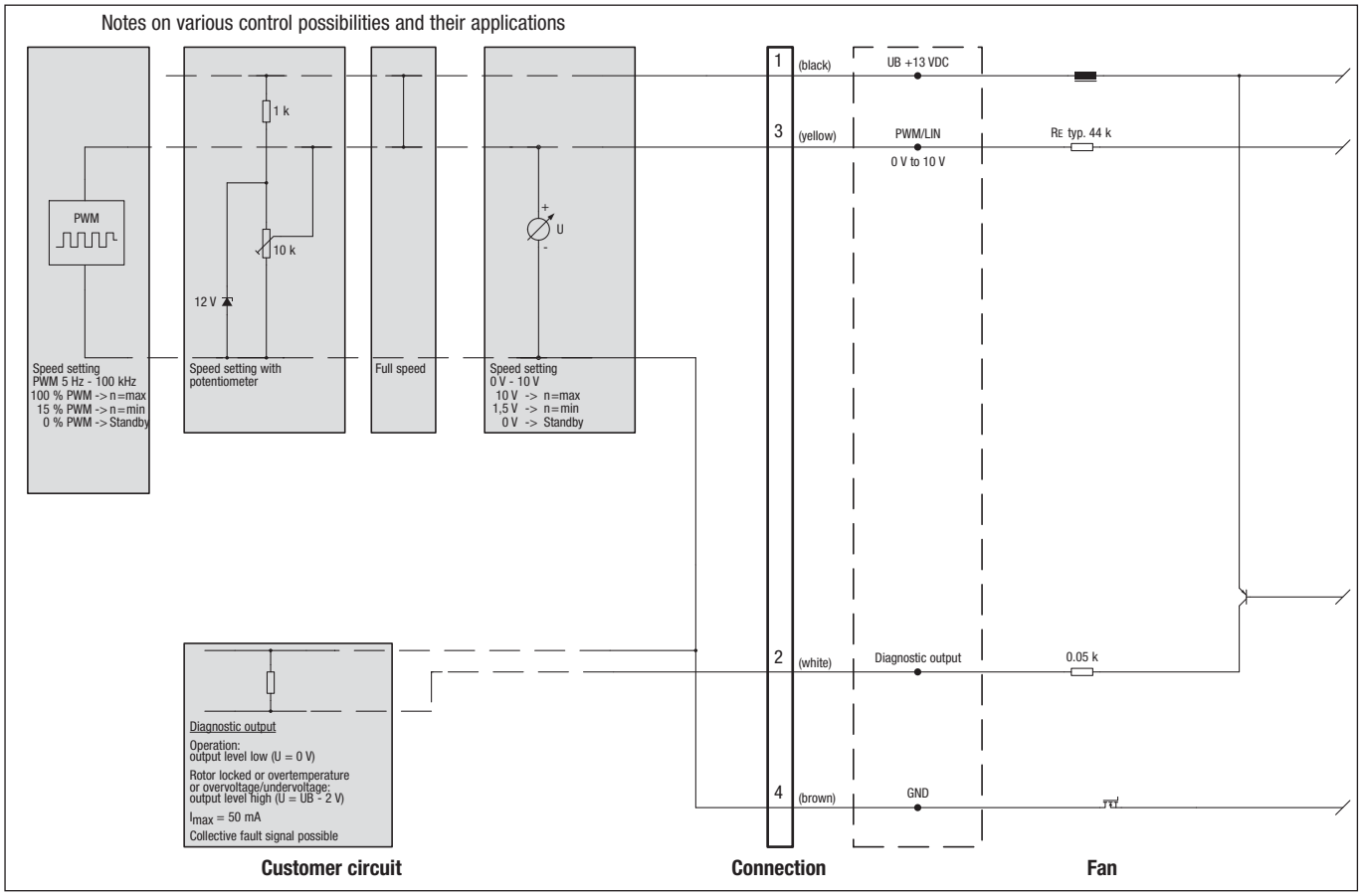
subject to alterations

Electrical connections

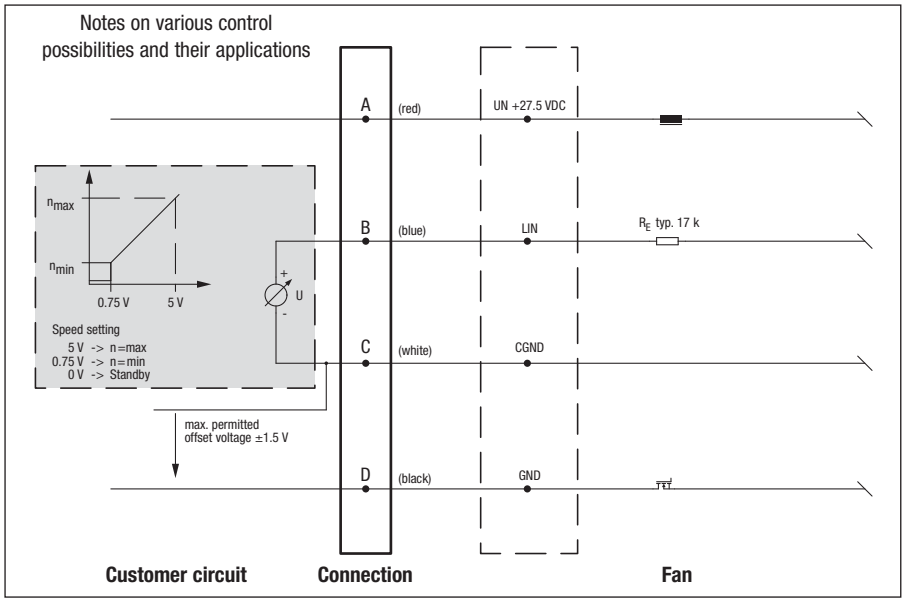
A) 13 VDC electrical connection (EC dual centrifugal blowers “Premium”)



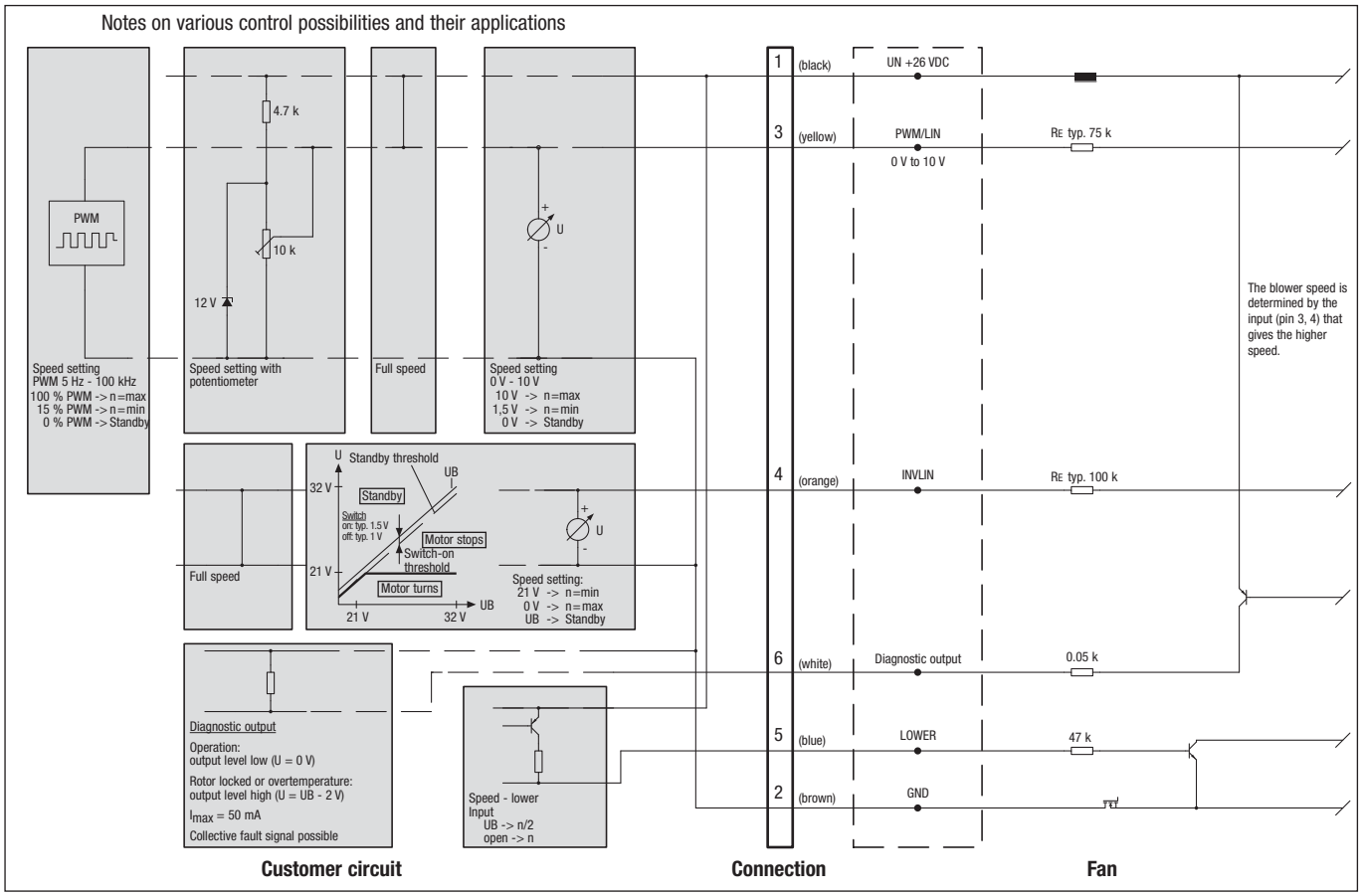
L) 13 VDC electrical connection (EC axial fans „Power“)



C) 27.5 VDC electrical connection

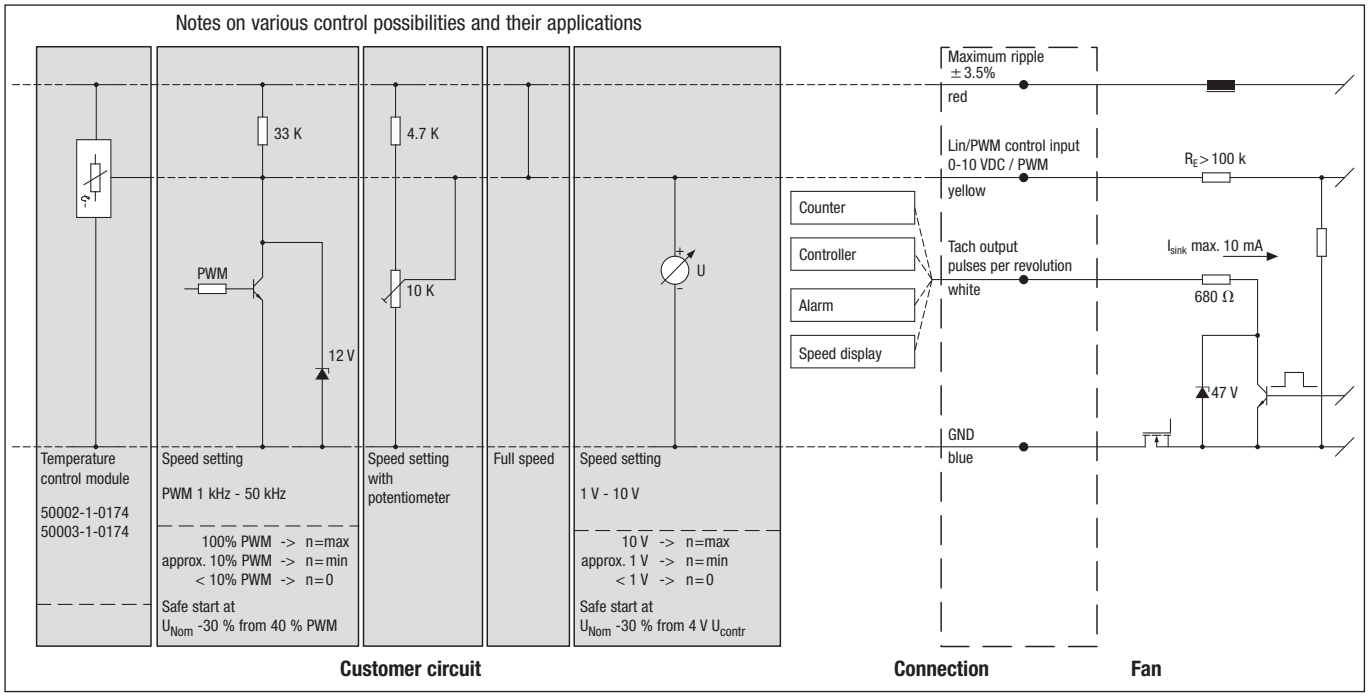


D) 26 VDC electrical connection

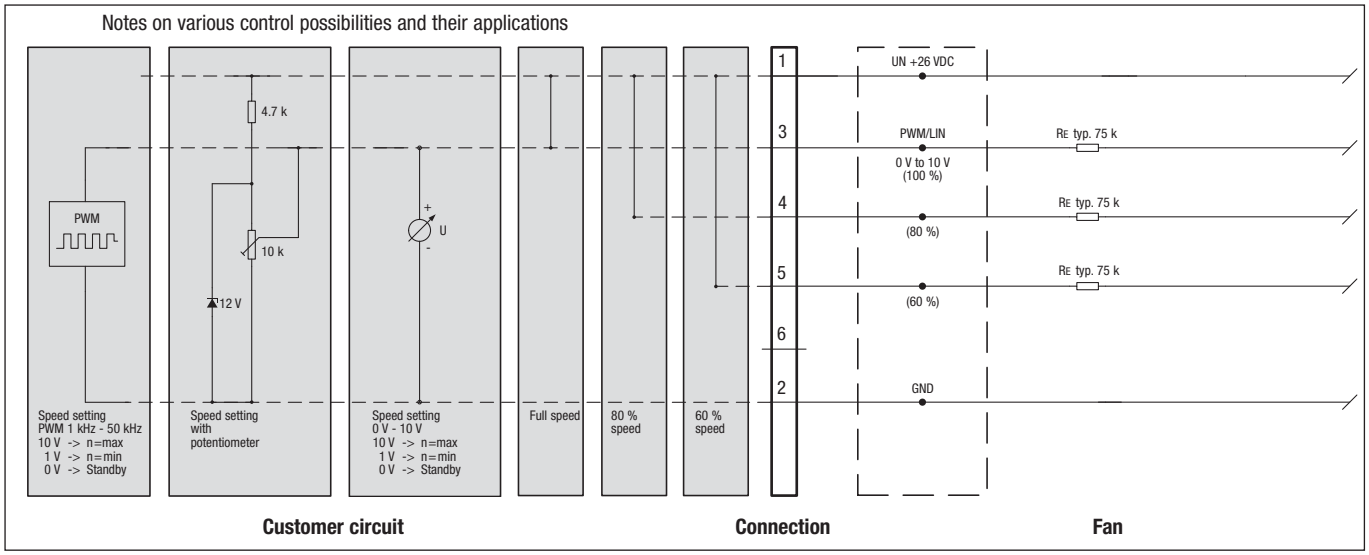


ebmpapst

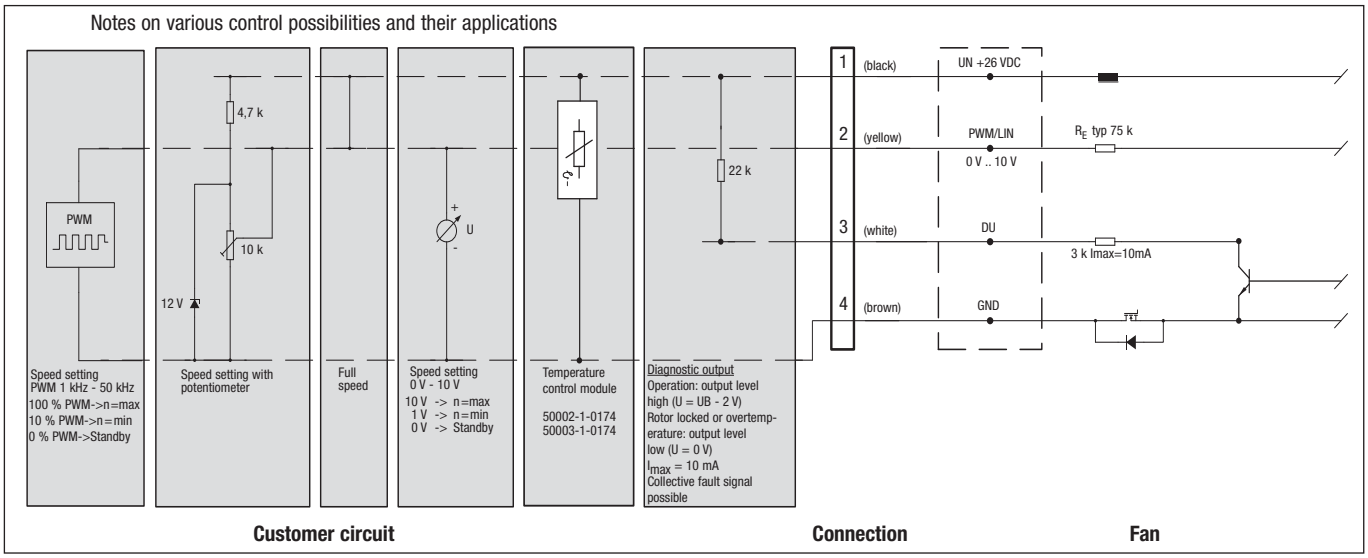
E) 24 VDC electrical connection



F) 26 VDC electrical connection (EC dual centrifugal blowers “Basic”)

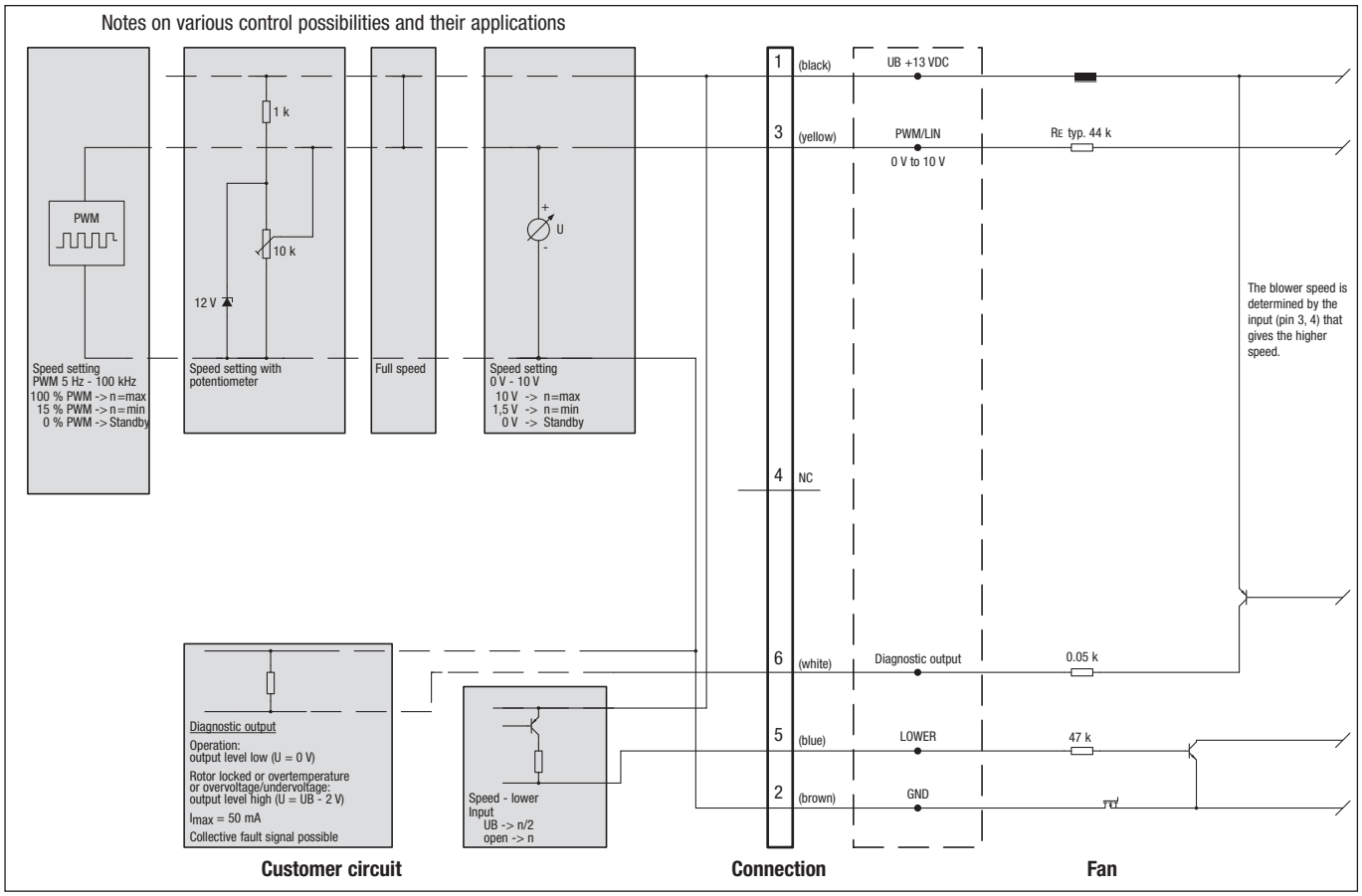


G) 26 VDC electrical connection (EC dual centrifugal blowers „Premium/Power“)

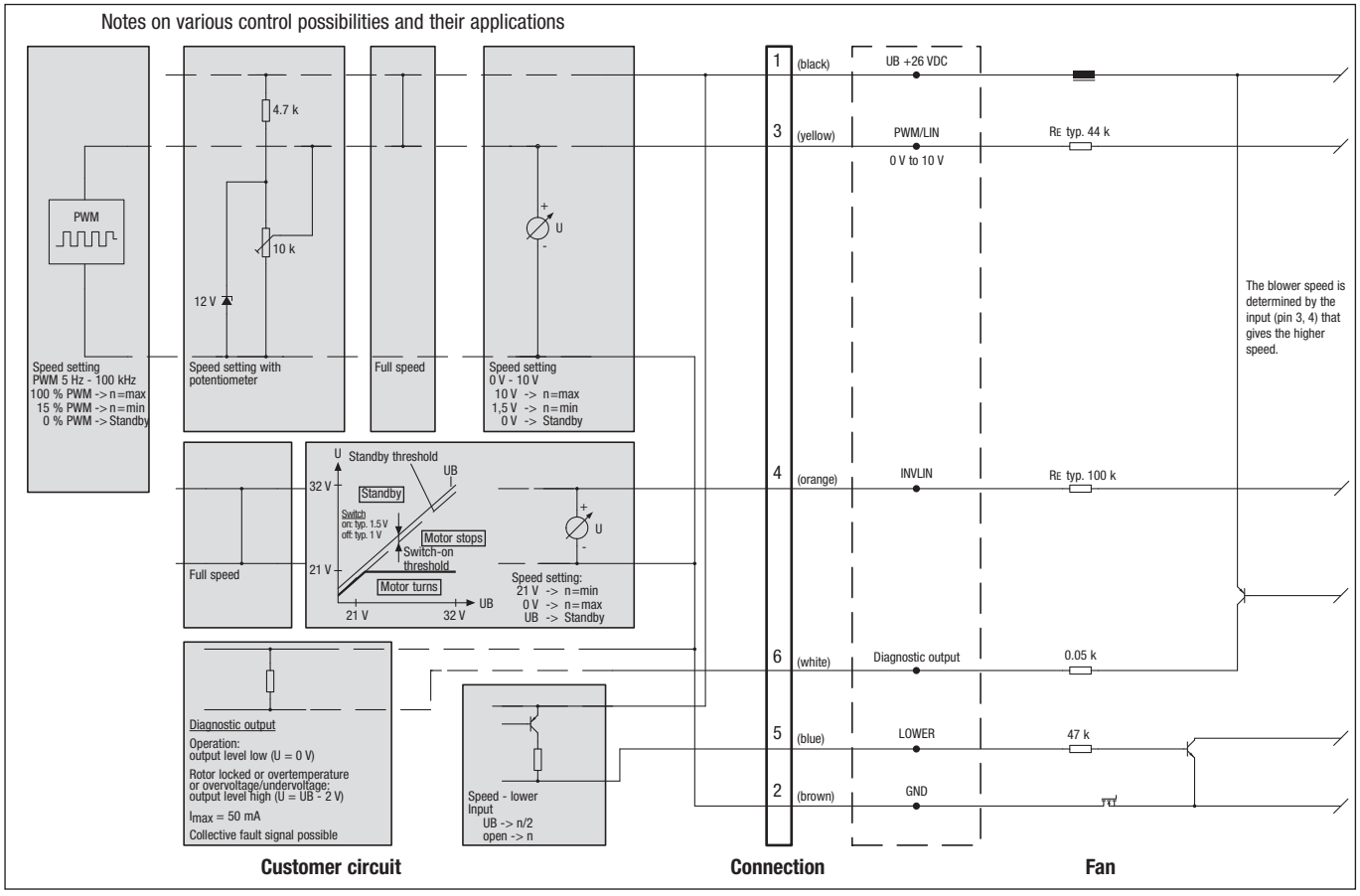


Electrical connections

K) 13 VDC electrical connection (EC axial fans „Premium“)



H) 26 VDC electrical connection (EC axial fans „Premium/Power“)



ebmpapst

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 automotive products depends on:

– The service life of the bearing system

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.

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), in-circuit
– PTC/NTC with electronic diagnostics
– Current limitation via electronics

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.

Approvals

In case you require a specific approval for your ebm-papst automotive product (e1, UL, 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^3.

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

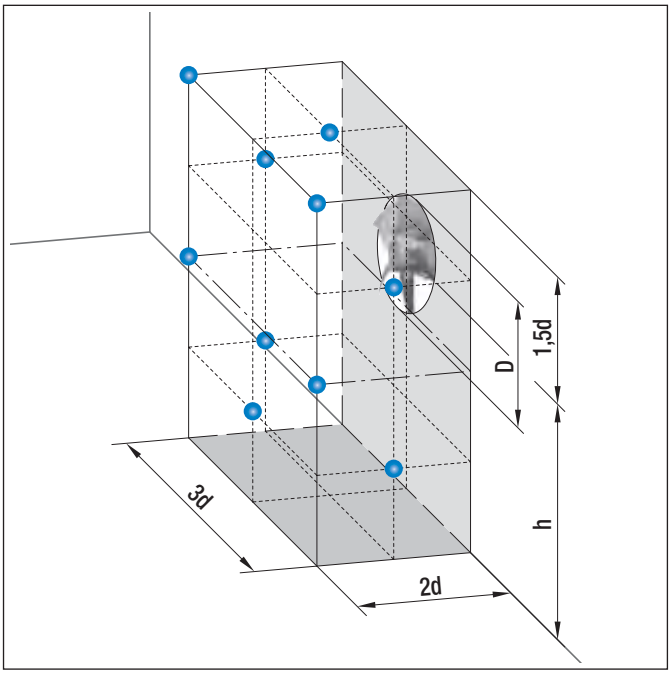
Measuring configuration as per ISO 13347-3 respectively DIN 45635-38:

● 10 measuring points

$d \geq D$

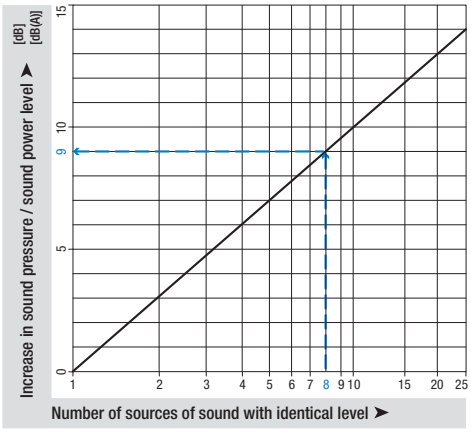
$h = 1{,}5d \ldots 4{,}5d$

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



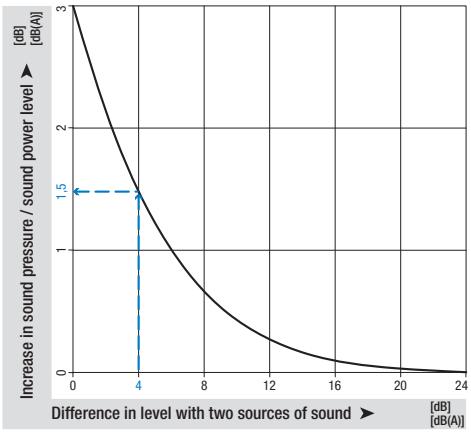
Combined level of multiple same-level sound sources

Adding 2 noise sources with the same level 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).



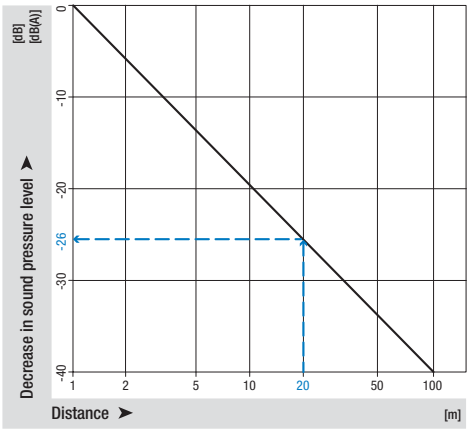
Combined level of two different-level sound sources

The acoustic performance of two different fans can be predetermined based on the sound levels given in the data sheet. This is shown in the diagram opposite.
Example: There is an axial fan A3G800 with a sound pressure level of 75 dB(A) at the operating point and an axial fan A3G710 with 71 dB(A) in a ventilation unit. The level difference is 4 dB. The level increase can now be read in the diagram as approx. 1.5 dB. This means that the overall sound level of the unit can be expected to be 76.5 dB(A).



Distance laws

Sound power level is independent of distance to the sound source. In contrast to this, sound pressure level decreases the further away the noise source is. The adjacent diagram shows the decrease in level under far sound field conditions. Far sound field conditions apply whenever the distance between microphone and fan is big when compared to fan diameter and wavelength to be considered. For more information on far sound field, please consult the relevant literature on this complex topic. Per doubling of distance, the level in the far sound field decreases by 6 dB. In the near field of the fan, other correlations apply and the decrease in levels can be considerably smaller. The following example only applies to far sound field conditions and can vary strongly depending on the installation effects:
With an axial fan A3G300, a sound pressure level of 65 dB(A) was measured at a distance of 1 m. According to the adjacent diagram, at a distance of 20 m we would get a reduction by 26 dB, i.e. a sound pressure level of 39 dB(A).



fan agent
compact fan agent
motor specialist
motor agent

ebm-papst in Germany

Germany

ebm-papst
Mulfingen GmbH & Co. KG

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

www.ebmpapst.com

ebm-papst
St. Georgen GmbH & Co. KG

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

www.ebmpapst.com

ebm-papst
Landshut GmbH

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

www.ebmpapst.com

Berlin
Dipl.-Ing. (TH) Jens Duchow
Händelstraße 7
D-16341 Panketal
Phone +49 30 944149-62
Fax +49 30 944149-63
Jens.Duchow@de.ebmpapst.com

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

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

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

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

Hamburg
Ingenieurbüro Breuell GmbH
Ing. Dirk Kahl
Elektroingenieur
Grützmühlenweg 48
D-22339 Hamburg
Phone +49 40 538092-19
Fax +49 40 538092-84
Dirk.Kahl@de.ebmpapst.com

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

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

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

Munich
Dipl.-Wirt.-Ing. (FH) Jens Peter
Landsbergerstraße 14
D-86932 Pürgen
Phone +49 8196 99877-54
Fax +49 8196 99877-55
Jens.Peter@de.ebmpapst.com

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

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

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

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

Distributors

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

Hamburg
Breuell + Hilgenfeldt GmbH
Grützmühlenweg 48
D-22339 Hamburg
Phone +49 40 538092-20
Fax +49 40 538092-84
info@breuell-hilgenfeldt.de

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

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

North
Breuell + Hilgenfeldt GmbH
Grützmühlenweg 48
D-22339 Hamburg
Phone +49 40 538092-20
Fax +49 40 538092-84
ebmpapst@breuell-hilgenfeldt.de

South
HDS Ventilatoren Vertriebs GmbH
Glaswiesenstraße 1
D-74677 Dörzbach
Phone +49 7937 80355-20
Fax +49 7937 80355-25
info@hds-gmbh.net
www.hds-gmbh.net

ebm-papst in Europe

Europe



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



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



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



Bulgaria
ebm-papst Romania S.R.L.
Str. Tarnavei No. 20
RO-500327 Brasov
Phone +40 268 331859
Fax +40 268 312805
dudasludovic@xnet.ro



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



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



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



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



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



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



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



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



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



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



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



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



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

fan agent
compact fan agent
motor specialist
motor agent

ebm-papst in Europe

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

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

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

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

Romania
ebm-papst Romania S.R.L.
Str. Tarnavei Nr. 20
RO-500327 Brasov
Phone +40 268 331859
Fax +40 268 312805
dudasludovic@xnet.ro

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

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

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

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

Sweden
ebm-papst AB
Äggelundavägen 2
S-17562 Järfälla
Phone +46 10 4544400
Fax +46 8 362306
info@ebmpapst.se
www.ebmpapst.se

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

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

Ukraine
ebm-papst Ukraine LLC
Lepse Boulevard, 4, Building 21
UA-03067 Kiev
Phone +38 044 2063091
Fax +38 044 2063091
mail@ebmpapst.ua
www.ebmpapst.ua

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

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

ebm-papst in America and Africa

America



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



Brazil
ebm-papst Motores Ventiladores Ltda.
Av. José Giorgi, 301 Galpões B6+B7
Condominio Logical Center
BR-06707-100 Cotia - São Paulo
Phone +55 11 4613-8700
Fax +55 11 4777-1456
vendas@br.ebmpapst.com
www.ebmpapst.com.br



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



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



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



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

Africa



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

fan agent
compact fan agent
motor specialist
motor agent

ebm-papst in Asia and Australia

Asia

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

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

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

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

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

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

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

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

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

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

Thailand
ebm-papst Thailand Co., Ltd.
99/9 Moo 2, Central Chaengwattana Tower
14th Floor, Room 1402
Chaengwattana Road Bangtarad, Pakkret
THA-11120 Nonthaburi
Phone +66 2 8353785-7
Fax +66 2 8353788
salesdept@th.ebmpapst.com

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

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

Australia

Australia
ebm-papst A&NZ Pty Ltd.
10 Oxford Road
AUS-Laverton North, Victoria, 3026
Phone +61 3 9360-6400
Fax +61 3 9360-6464
sales@ebmpapst.com.au
www.ebmpapst.com.au

New Zealand
ebm-papst A&NZ Pty Ltd.
102 Henderson Valley Road
NZ-Henderson, Auckland 1230
Phone +64 9 837-1884
Fax +64 9 837-1899
sales@ebmpapst.com.au
www.ebmpapst.com.au

37659-7-8811 · 2012-09 · KD-1'
Printed in Germany

ebm-papst
Mulfingen GmbH & Co. KG

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

www.ebmpapst.com

FSC
www.fsc.org
MIX
Paper from responsible sources
FSC® C020290

ebmpapst

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ebm-papst:

W2S130-AA25-72 W3G300-BV12-41