

KARTA KATALOGOWA

3212 J

Wentylator osiowy kompaktowy DC

Producent: ebm-papst

**Dane znamionowe**

Napięcie znamionowe	12 V DC (7...14,5 V DC)
Prędkość obrotowa	4000 obr/min
Pobór mocy	2,7 W
Pobór prądu	225 mA
Wydajność	83 m³/h
Maks. ciśnienie statyczne	106 Pa
Poziom ciśnienia akustycznego	42 dB(A)
Poziom mocy akustycznej	5,1 B
Temperatura otoczenia	-20...+70 °C

Budowa

Wymiary	92 × 92 × 38 mm
Materiał wirnika	tworzywo sztuczne
Obudowa	tworzywo sztuczne
Kierunek przepływu	wydmuch przez żebra
Łożyskowanie	kulkowe
Trwałość L10 (40 °C)	70000 h

Dane na okładce odczytane z karty produktu ebm-papst (oryginał na kolejnych stronach).
Producent zastrzega możliwość zmian.

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Product Data Sheet **8315100057**
VWCF092JHGHZ
3212J/19MU-00057

ebm**papst**

engineering a better life



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1 General

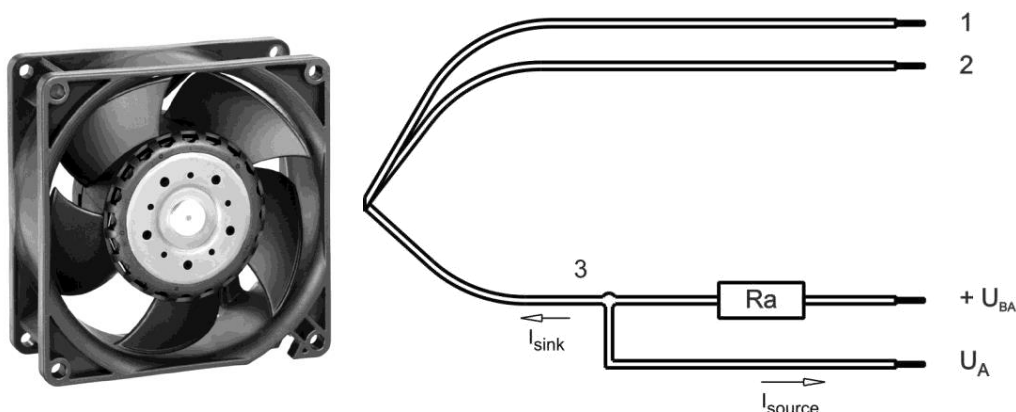
Fan type	Axial	
Rotating direction looking at rotor	Clockwise	
Airflow direction	Air outlet over struts	
Bearing system	Ball bearing	
Mounting position - shaft	Any	

2 Mechanics
2.1 General

Width	92,0 mm	
Height	92,0 mm	
Depth	38,0 mm	
Mass	0,255 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges	Wire outlet corner: 140 Ncm Remaining corners: 190 Ncm	
Screw size	ISO 4762 - M4 degreased, without an additional brace and without washer	

2.2 Connections

Electrical connection	Wires - Plug	
Lead wire length	L = 252 mm	
Tolerance	+ - 5 mm	
Tube length	S = 185 mm	
Tolerance	+ - 5 mm	
Plug	See drawing	
Contact	See drawing	



Wire	Color	Operation	Plug connection	Wire size	Insulation diameter
1	red	+ UB	Pin 1	AWG 20	1,85 mm
2	blue	- GND	Pin 3	AWG 20	1,85 mm
3	violet	Alarm	Pin 2	AWG 20	1,85 mm

The auxiliaries shown on the schematic diagram (which are required for the intended use) are not part of our delivery.

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3 Operating Data
3.1 Electrical Operating Data

Measurement conditions: Normal air density = 1,2 kg/m³; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

$\Delta p = 0$: corresp. to free air flow (see chapter aerodynamics)
 I: corresp. to arithm. mean current value

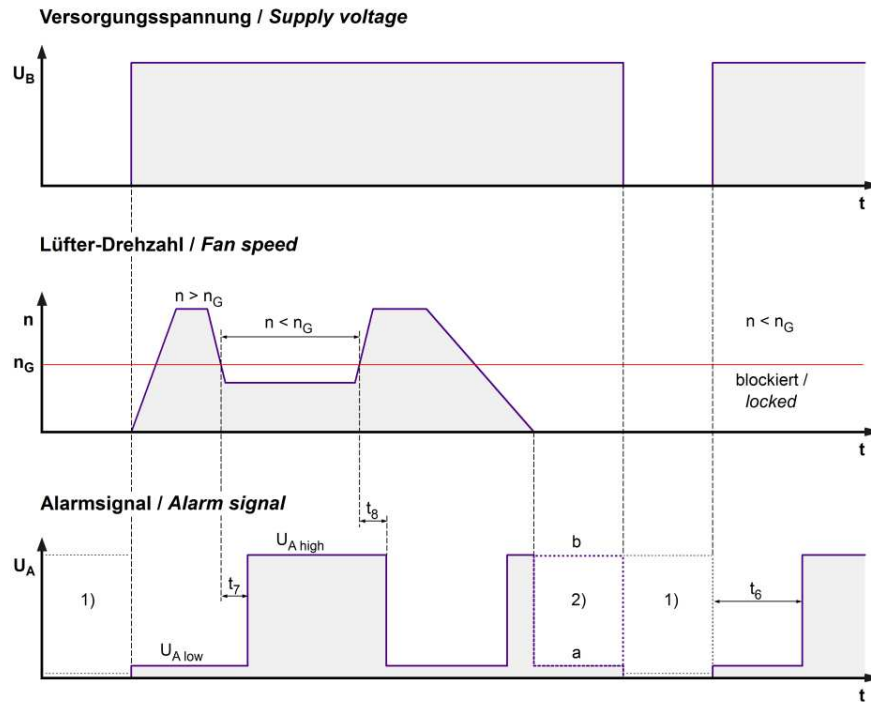
Features	Condition	Symbol	Values		
Voltage range		U	7 V		14,5 V
Nominal voltage		U _N		12 V	
Power consumption	$\Delta p = 0$	P	1 W	2,7 W	2,9 W
Tolerance	0010		+/- 17,5 %	+/- 25 %	+/- 25 %
Current consumption	$\Delta p = 0$	I	133 mA	225 mA	200 mA
Tolerance	0010		+/- 17,5 %	+/- 25 %	+/- 25 %
Speed	$\Delta p = 0$	n	2.600 1/min	4.000 1/min	4.000 1/min
Tolerance	0010		+/- 12,5 %	+/- 3 %	+/- 3 %
Starting current consumption				<= 2.150 mA	

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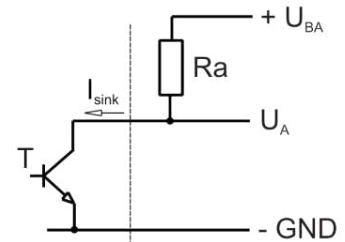
3.2 Electrical Interface - Output

Alarm type	/19 (low = ok, open collector inverse)
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$$R_a = \frac{U_{BA} - U_{A \text{ low}}}{I_{\text{sink}}}$$

Lüfter / Fan **Kunde / Customer**



- 1) Wenn der Lüfter abgeschaltet ist, hängt der Zustand des Ausgangssignals U_A von der Kundenapplikation ab.
When the fan is powered off, the output signal U_A depends on the customer's application.
- 2) Für den gültigen Zustand (a oder b) siehe Alarmunterdrückung in der Tabelle.
For the valid condition (a or b) see alarm suppression in the table.

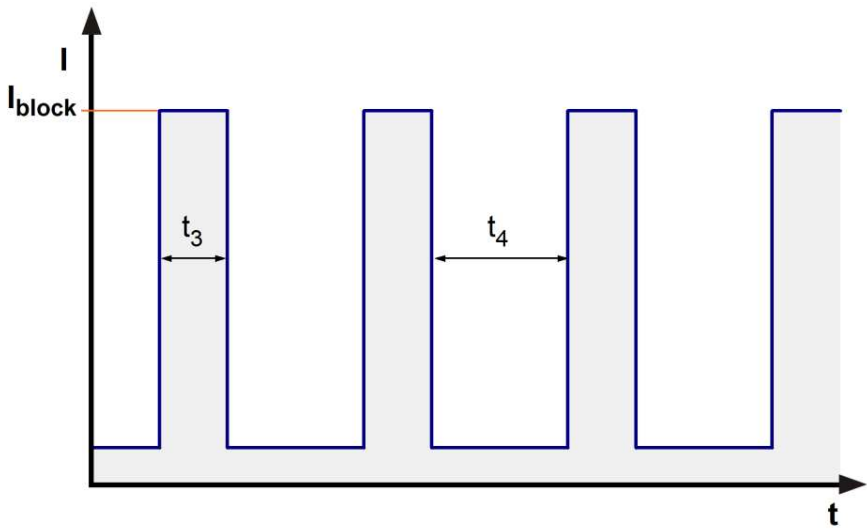
Features	Note	Values
Alarm operating voltage	U_{BA}	$\leq 60 \text{ V}$
Alarm signal Low	$U_{A \text{ low}}$	$\leq 0,1 \text{ V}$
Maximum sink current	I_{sink}	200 mA
External resistor	External resistor R_a from U_{BA} to U_A required. All voltage measured to GND.	
Alarm start-up delay time	t_6	$\leq 15 \text{ s}$
Alarm delay time	t_7	$< 1 \text{ s}$
Alarm delay time	t_8	$< 1 \text{ s}$
Alarm trip speed limit	n_G	3.050 1/min $\pm 50 \text{ 1/min}$
Tolerance		
Alarm at sense failure	No	
Alarm latch	No	
Alarm isolated from motor	No	

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3.3 Electrical Features

Electronic function	Speed-Controlled	
Reversed polarity protection	Rectifying diode	
Max. residual current at U_N	$I_F \leq 100 \mu A$	
Locked rotor protection	Auto restart	
Locked rotor current at U_N	I_{block} approx. 1.850 mA	
Clock signal at locked rotor	t_3 / t_4 typical: 0,25 s / 10 s	



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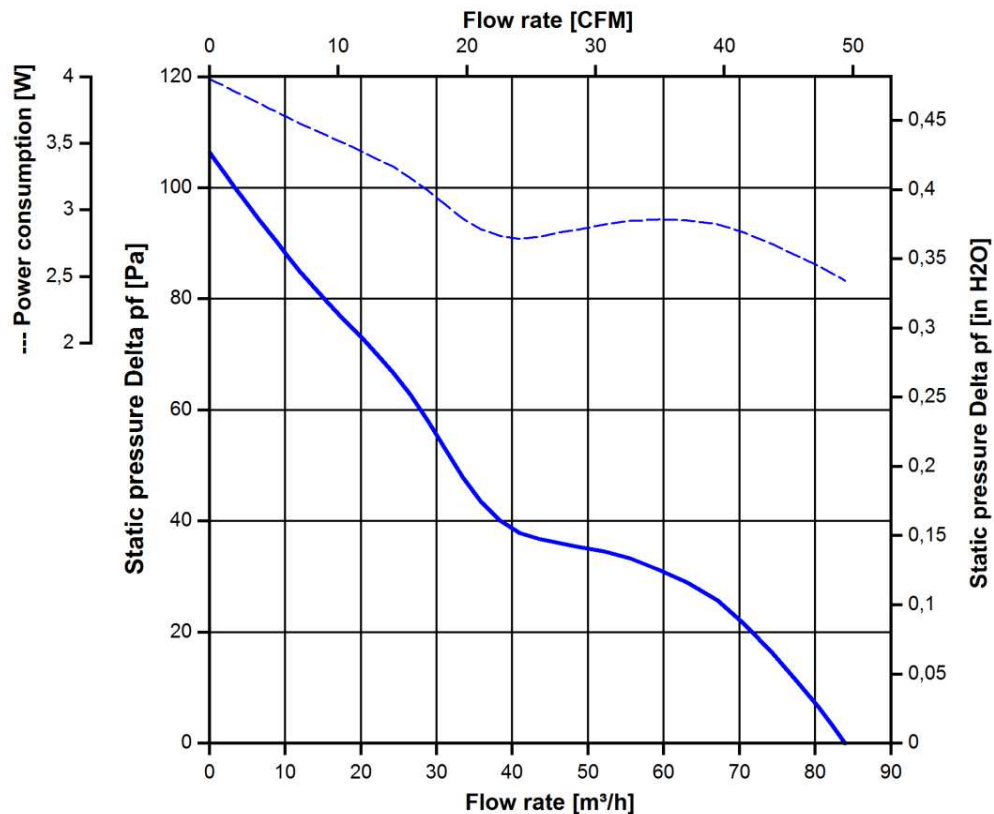
3.4 Aerodynamics

Measurement conditions: Measured with a double chamber intake rig acc. to DIN EN ISO 5801.
 Normal air density = 1,2 kg/m³; Temperature 23°C +/- 3°C;
 In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal.
 The information is only valid under the specified test conditions and may be changed by the installation conditions. If there are deviations from the standard test conditions, the characteristic values must be checked under the installed conditions. Power consumption of the fan motor when operating at normal voltage is shown. Depending on the operating conditions of the application, the power input may be higher.

a.) Operation condition:

4.000 1/min at free air flow

Max. free-air flow ($\Delta p = 0 / \dot{V} = \max.$)	83,0 m ³ /h	
Max. static pressure ($\Delta p = \max. / \dot{V} = 0$)	106 Pa	



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3.5 Sound Data

Measurement conditions: Sound pressure level: 1 meter distance between microphone and the air intake.
 Sound power level: According to DIN 45635 Part 38 (ISO 10302)
 Measured in a semianechoic chamber with a background noise level of $L_p(A) < 5 \text{ dB(A)}$
 For further measurement conditions see chapter aerodynamics.

a.) Operation condition:

4.000 1/min at free air flow

Optimal operating point	58 m ³ /h @ 32 Pa	
Sound power level at the optimal operating point	5,1 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	42 dB(A)	

4 Environment
4.1 General

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	70 °C	
Min. permitted storage temperature TL min.	-40 °C	
Max. permitted storage temperature TL max.	80 °C	

4.2 Climatic Requirements

Humidity requirements	humid temperature, cyclic; according to DIN EN 60068-2-38, 10 cycle and condensation water check; according to DIN EN ISO 6270-2, 14 days	
Water exposure	Immersion test IPX8; according to DIN EN 60529 VDE 0470, not certified	
Dust requirements	Dust check IP6X; according to DIN EN 60529 VDE 0470, not certified	
Salt fog requirements	Salt fog, constant, (Bellcore II); according to DIN EN 60068-2-22, 30 days, operation at nominal speed	

Permitted application area:

The product is for the use in open and unsheltered areas. Direct exposure to water as well as saline ambient conditions are allowed provided that this does not prevent the normal operation.

Pollution degree 4 (according DIN EN 60664-1)

It occurs permanent conductivity caused by conductive dust, rain or moisture.

Please require severity levels and specification parameters from the responsible development departments.

4.3 EMC

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5 Safety
5.1 Electrical Safety

Dielectric strength DIN EN 62368 and DIN EN 60335 A.) Type test Measuring conditions: After 48h of storage at 95% R.H. and 25°C. No arcing or breakdown is allowed! All connections together to ground. B.) Routine test Measuring conditions: At indoor climate. No arcing or breakdown is allowed! All connections together to ground.	500 VAC / 1 Min. 850 VDC / 1 Sec.	
Isolation resistance Measuring conditions: After 48h of storage at 95% R.H. and 25°C measured with U=500 VDC for 1 min.	RI > 10 MOhm	
Clearance / creepage distance	1,0 mm / 1,2 mm	
Protection class	III	

5.2 Approval Tests

CE	EC Declaration of Conformity	Yes
EAC	Eurasian Conformity	Yes
UL	Underwriters Laboratories	Yes / UL507, Electric Fans E38324
VDE	Association for Electrical, Electronic and Information Technologies	Yes / Approval acc. to EN 62368 - Audio/video, information and communication technology equipment
CSA	Canadian Standards Association	Yes / C22.2 No. 113 Fans and Ventilators
CCC	China Compulsory Certification	Not applicable

6 Reliability
6.1 General

Life expectancy L10 at TU = 40 °C	70.000 h	
Life expectancy L10 at TU max.	35.000 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	117.500 h	

