

KARTA KATALOGOWA

4314 NMU

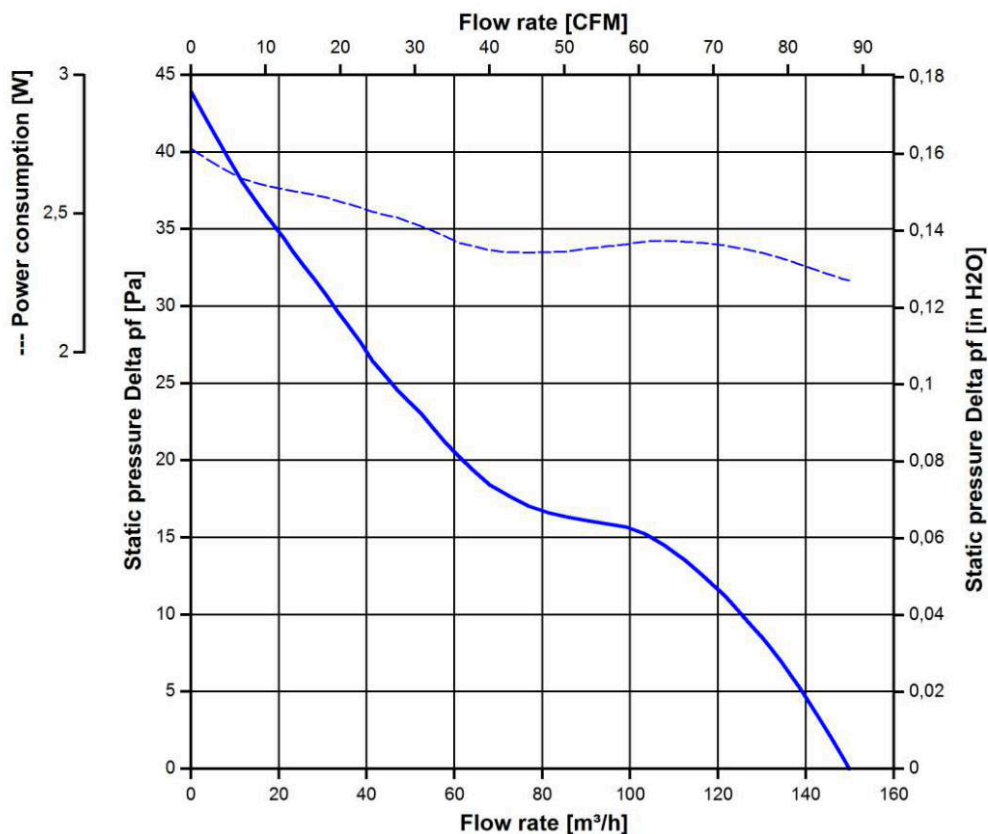
Wentylator osiowy kompaktowy DC

Producent: ebm-papst



Dane znamionowe		Budowa	
Napięcie znamionowe	24 V DC (12...28 V DC)	Wymiary	119 × 119 × 32 mm
Prędkość obrotowa	2100 obr/min	Materiał wirnika	tworzywo sztuczne
Pobór mocy	1,9 W	Obudowa	tworzywo sztuczne
Pobór prądu	80 mA	Kierunek przepływu	wydmuch przez żebra
Wydajność	148 m³/h	Łożyskowanie	kulkowe
Maks. ciśnienie statyczne	44 Pa	Podłączenie	przewody
Temperatura otoczenia	-20...+75 °C	Trwałość L10 (40 °C)	85000 h

Charakterystyka przepływowa



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

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Product Data Sheet **9293510738**
VWCE119PJGKS
4314 NMU

ebm**papst**

engineering a better life



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INDEX

1	General	3
2	Mechanics	3
2.1	General	3
2.2	Connections	3
3	Operating Data	4
3.1	Electrical Operating Data	4
3.2	Electrical Features	5
3.3	Aerodynamics	6
3.4	Sound Data	7
4	Environment	7
4.1	General	7
4.2	Climatic Requirements	8
4.3	Mechanical Requirements	9
5	Safety	10
5.1	Electrical Safety	10
5.2	Approval Tests	10
6	Reliability	10
6.1	General	10

Product Data Sheet
9293510738
 VWCE119PJGKS
 4314 NMU

1 General

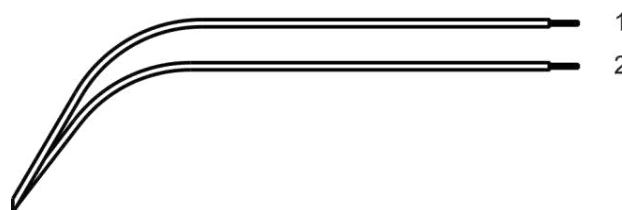
Fan type	Axial	
Rotating direction looking at rotor	Clockwise	
Airflow direction	Air outlet over struts	
Bearing system	Ball bearing	
Mounting position - shaft	Any	

2 Mechanics
2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	32 mm	
Mass	0,26 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges	Wire outlet corner: 80 Ncm Remaining corners: 80 Ncm	
Screw size	ISO 4762 - M4 degreased, without an additional brace and without washer	
Rotor protrusion max.	0,4 mm	

2.2 Connections

Electrical connection	Wires	
Lead wire length	L = 310 mm	
Tolerance	+ - 10,0 mm	



Wire	Color	Operation	Wire size	Insulation diameter
1	red	+ UB	AWG 24	1,5 mm
2	blue	- GND	AWG 24	1,5 mm

Product Data Sheet
9293510738
 VWCE119PJGKS
 4314 NMU

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.

Δp = 0: corresp. to free air flow (see chapter aerodynamics)
 I: corresp. to arithm. mean current value

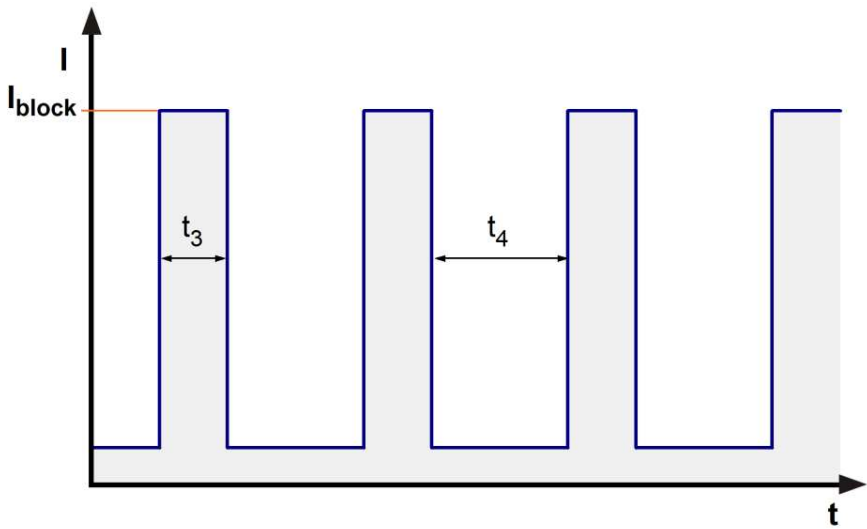
Features	Condition	Symbol	Values		
Voltage range		U	12 V		28 V
Nominal voltage		U _N		24 V	
Power consumption	Δp = 0	P	0,4 W	1,9 W	2,6 W
Tolerance	0010		+/- 17,5 %	+/- 12,5 %	+/- 15 %
Current consumption	Δp = 0	I	33 mA	80 mA	94 mA
Tolerance	0010		+/- 17,5 %	+/- 12,5 %	+/- 15 %
Speed	Δp = 0	n	1.100 1/min	2.100 1/min	2.400 1/min
Tolerance	0010		+/- 12,5 %	+/- 7,5 %	+/- 10 %
Starting current consumption				400 mA	

Product Data Sheet

9293510738
VWCE119PJGKS
4314 NMU

3.2 Electrical Features

Electronic function	None	
Reversed polarity protection	Rectifying diode	
Max. residual current at U_N	$I_F < 100 \mu A$	
Locked rotor protection	Auto restart	
Locked rotor current at U_N	I_{block} approx. 400 mA	
Clock signal at locked rotor	t_3 / t_4 typical: 0,4 s / 5 s	



locked rotor at 24V
Startup current at 24 V; 0 - 2100 rpm
Typical running current at 24 V - free blowing, 2100 rpm

Product Data Sheet
9293510738
 VWCE119PJGKS
 4314 NMU

3.3 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;

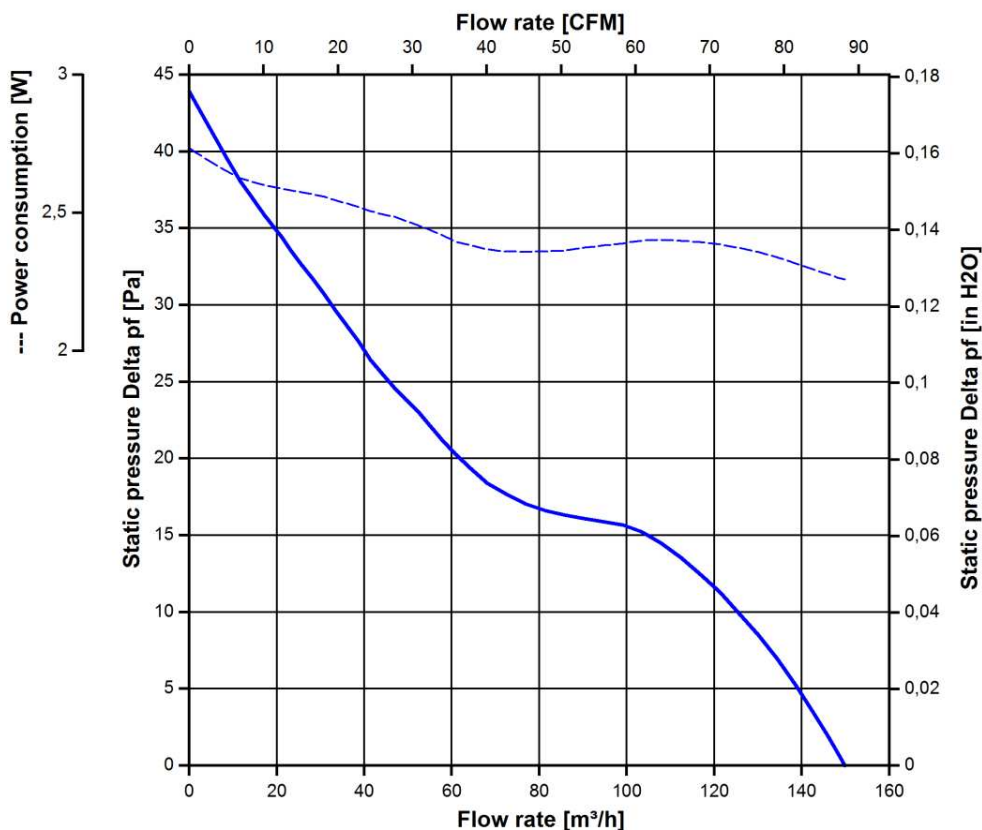
In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal.

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:

2.100 1/min at free air flow

Max. free-air flow ($\Delta p = 0$ / $\dot{V} = \max.$)	148 m ³ /h	
Max. static pressure ($\Delta p = \max.$ / $\dot{V} = 0$)	44 Pa	



Product Data Sheet
9293510738
 VWCE119PJGKS
 4314 NMU

3.4 Sound Data

Measurement conditions: Sound pressure level: 1 meter distance between microphone and the air intake.
 Sound power level: Acc. 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:

2.100 1/min at free air flow

Optimal operating point	110 m ³ /h @ 14 Pa	
Sound power level at the optimal operating point		
Sound pressure level at free air flow, measured in rubber bands		

4 Environment
4.1 General

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	75 °C	
Min. permitted storage temperature TL min.	-40 °C	
Max. permitted storage temperature TL max.	80 °C	

Product Data Sheet
9293510738
 VWCE119PJGKS
 4314 NMU

4.2 Climatic Requirements

IP-protection type (certified)	IP 68 (for fan only, not for connector if applicable) **)	
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	
Salt fog requirements	Salt fog, cyclic, in operation; according to DIN EN 60068-2-52; 10 cycles	

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.

**) The specification of the IP protection refers to the conditions mentioned in certification of the fan. The above mentioned short description of the protection scope is not final. For detailed information of the respective protection scope and definitions, see certification as well as DIN EN 60529 (protection by housings) and ISO 20653 (for vehicles) with the letter K.

Short description of the IP-protection type:

Solid particle Protection: Dust tight.

Protection against deliberate contact: Protected against contact to hazardous parts with a wire.

Protection against water: The fan test according to IP68 (Based on IEC 60529), is conducted in non-operating mode. The fan is tested by a complete immersion in water for a period of 2h at a water-level of 1,2m. Electrical connections are not immersed since they are customer specific.

Product Data Sheet
9293510738
 VWCE119PJGKS
 4314 NMU

4.3 Mechanical Requirements

severity level	Vibration (sinusoidal)	
0,5 G	Vibration (sinusoidal) in use IEC 60068-2-6 Displacement / frequency range Acceleration / frequency range Sweep rate Sweep cycles Duration Axes of vibration	Vibration (sinusoidal) 0,035 mm / 10-60, 60-10 Hz 0,5 G / 60-500-60 Hz 1 Oct./min 10 2 hrs. 3

severity level	stationary use		
1	storage / transportation	Random vibration not in use IEC 60068-2-64 Frequency range / ASD G _{RMS} Axes of vibration Test duration	Random vibration 5 - 20 Hz : 1,0 m ² / s ³ 20 - 500 Hz : - 3 dB / Oct 0,91 G 3 3 x 5 h
	storage / transportation	Bump not in use IEC 60068-2-29 Shock spectrum Acceleration Duration Number of bumps (+X, -X, -Y, +Y, -Z, +Z) Total bumps	Bump half sine 18 G 6 ms 100 in each direction 600
	stationary use	Random vibration in use IEC 60068-2-64 Frequency range / ASD G _{RMS} Axes of vibration Test duration	Random vibration 5 - 20 Hz : 2,0 m ² / s ³ 20- 150 Hz : - 3 dB / Oct 0,83 G 3 3 x 5 h
	stationary use	Bump in use IEC 60068-2-29 Shock spectrum Acceleration Duration Number of bumps (+X, -X, -Y, +Y, -Z, +Z) Total bumps	Bump half sine 5 G 11 ms 100 in each direction 600

Product Data Sheet
9293510738
 VWCE119PJGKS
 4314 NMU

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. Not applicable	
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	85.000 h	
Life expectancy L10 at TU max.	32.500 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	142.000 h	

