

Product Data Sheet **9292910145**
VWCE080PJFJS
8314 N/2H3P

ebmpapst

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8314 N/2H3P

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1 General

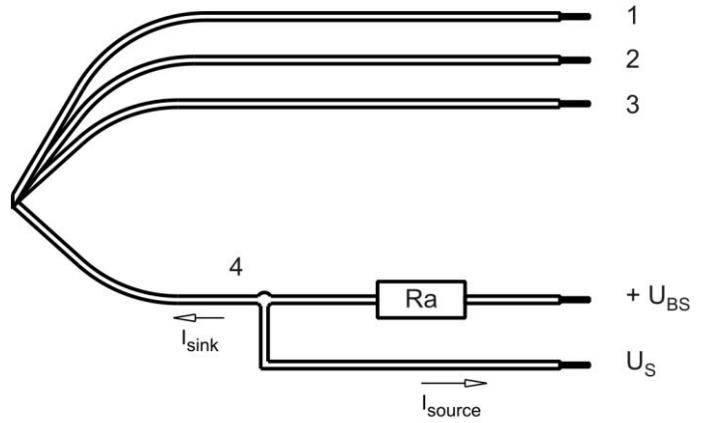
Fan type	Axial-Panel-Fan	
Rotating direction looking at rotor	Counterclockwise	
Airflow direction	Air outlet over struts	
Bearing system	Ball bearing	
Mounting position - shaft	Any	

2 Mechanics**2.1 General**

Width	80,0 mm	
Height	80,0 mm	
Depth	32 mm	
Mass	0,1 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges Screw size	Wire outlet corner: 100 Ncm Remaining corners: 100 Ncm ISO 4762 - M4 degreased, without an additional brace and without washer	

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 26	1,35 mm
2	blue	- GND	AWG 26	1,35 mm
3	white	Tacho	AWG 26	1,35 mm
4	violet	PWM	AWG 26	1,35 mm

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

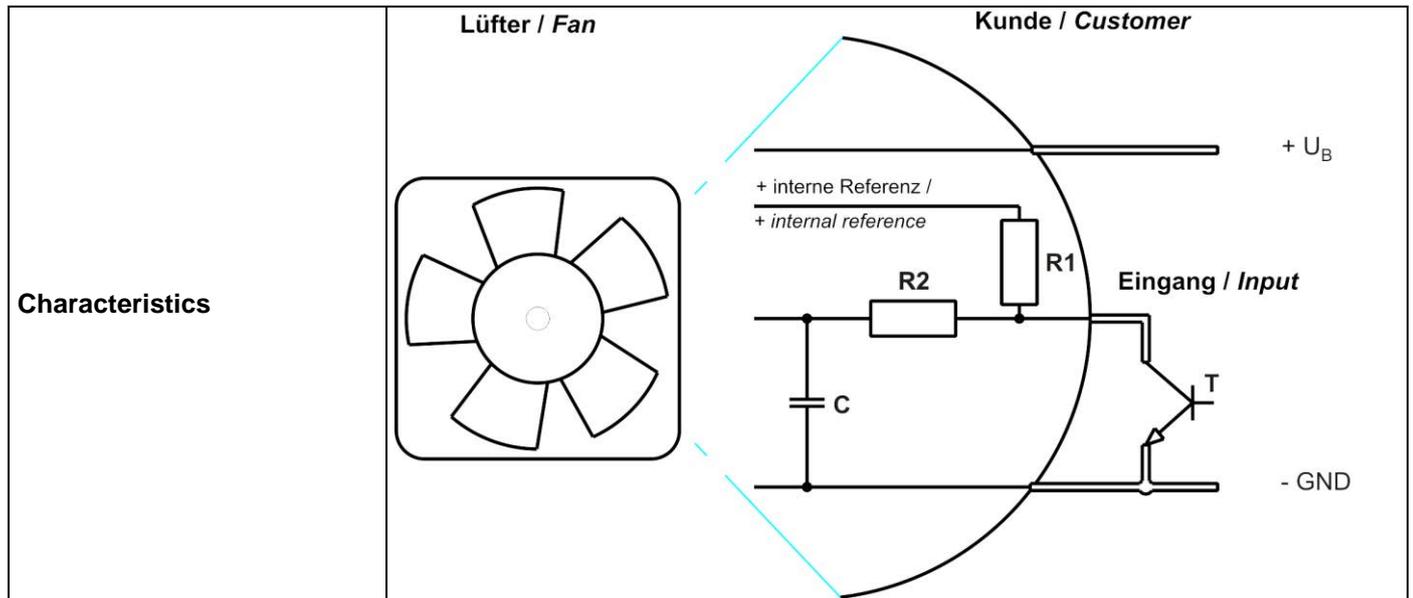
3 Operating Data

3.1 Electrical Interface - Input

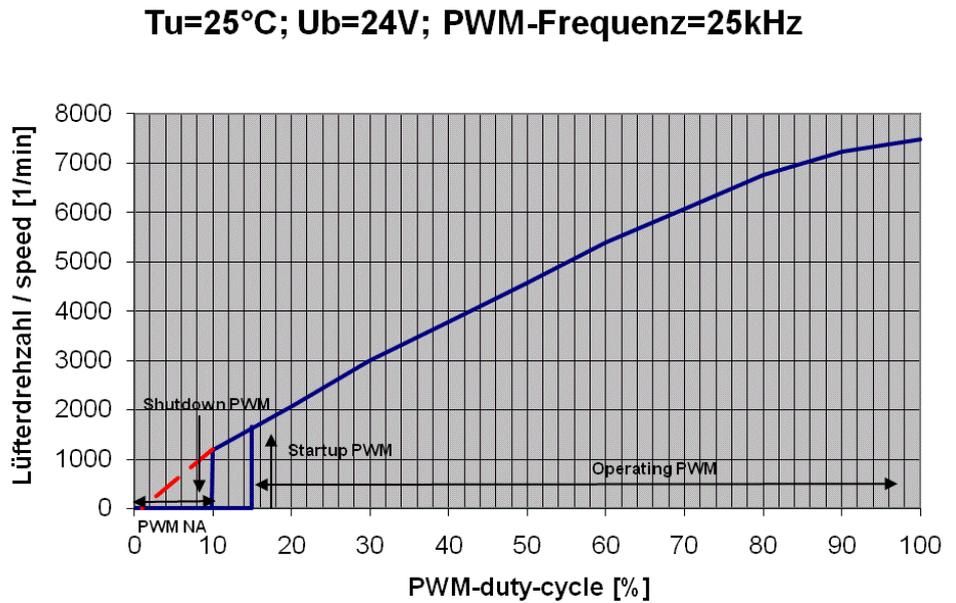
Control input	PWM
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Features

Input type	Open collector / TTL	
PWM - Frequency		21 kHz - 28 kHz typical: 25 kHz
Max. voltage for logic "Low"		0,8 V
Max. voltage for logic "High"	Open circuit voltage	5,25 V
Maximum source current	short circuit current	5 mA
4 wire startup condition	PWM duty cycle	> 15 %
4 wire operation condition after startup	PWM duty cycle	10 % - 100 %
PWM not applicable	PWM n.a.	1 % - 10 %
Shutdown condition	PWM duty cycle	< 1 %



Schematics



3.2 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.

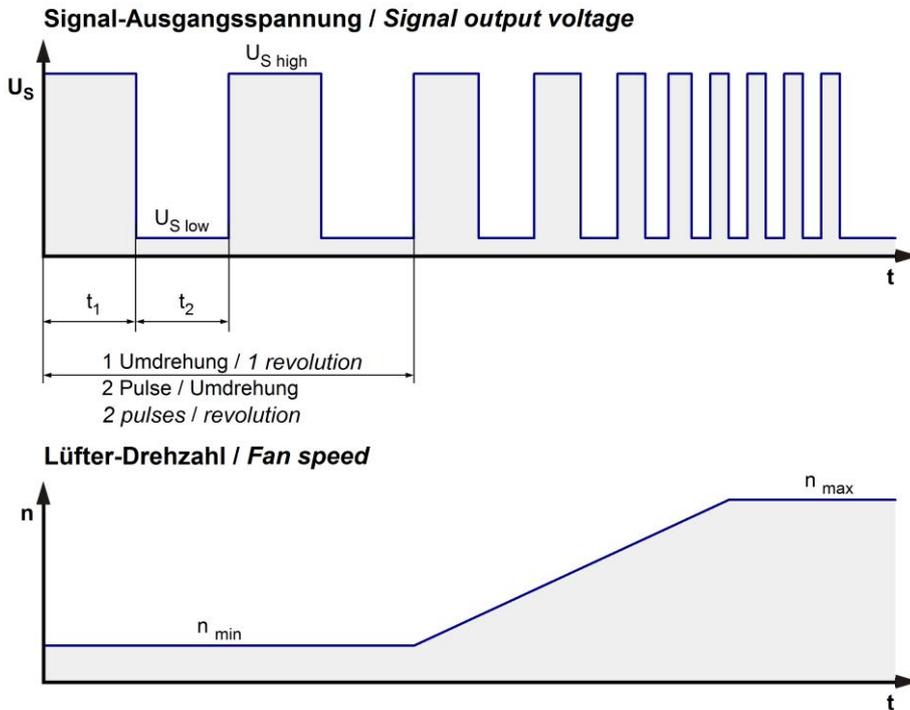
- Δp = 0: corresp. to free air flow (see chapter aerodynamics)
- l: corresp. to arithm. mean current value

Name	Condition
PWM 0001	PWM: 100 %; f: 25 kHz

Features	Condition	Symbol	Values		
Voltage range		U	18 V		26,4 V
Nominal voltage		U _N		24 V	
Power consumption	Δp = 0	P	4,5 W +/- 17,5 %	8,9 W +/- 12,5 %	10,5 W +/- 15,0 %
Tolerance	PWM 0010				
Current consumption	Δp = 0	I	250 mA +/- 17,5 %	370 mA +/- 12,5 %	398 mA +/- 15,0 %
Tolerance	PWM 0010				
Speed	Δp = 0	n	6.000 1/min +/- 12,5 %	7.600 1/min +/- 7,5 %	8.100 1/min +/- 10,0 %
Tolerance	PWM 0010				
Starting current consumption				<= 2.100 mA	

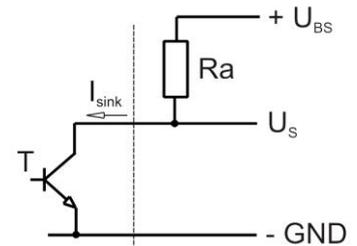
3.3 Electrical Interface - Output

Tacho type	/2 (open collector)
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$$R_a = \frac{U_{BS} - U_{S\ low}}{I_{sink}}$$

Lüfter / Fan Kunde / Customer

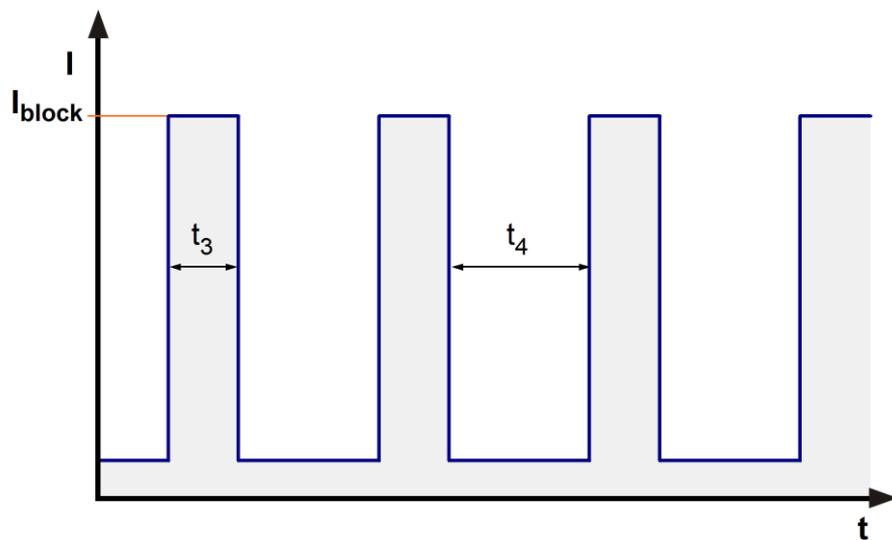


Features	Note	Values
Tacho operating voltage	U_{BS}	$\leq 30\text{ V}$
Tacho signal Low	$U_{S\ low}$	$I_{sink}: 2\text{ mA}$ $\leq 0,4\text{ V}$
Tacho signal High	$U_{S\ high}$	$I_{source}: 0\text{ mA}$ 30 V
Maximum sink current	I_{sink}	$\leq 10\text{ mA}$
External resistor	External resistor R_a from U_{BS} to U_S required. All voltages measured to GND.	
Tacho frequency	$(2 \times n) / 60$	
Tacho isolated from motor	No	
Slew rate		$\geq 0,5\text{ V/us}$

n = revolutions per minute (1/min)

3.4 Electrical Features

Electronic function	None	
Reversed polarity protection	Rectifying diode	
Max. residual current at U_N	$I_F \leq 10 \text{ mA}$	
Locked rotor protection	Auto restart	
Locked rotor current at U_N	I_{block} approx. 2.100 mA	
Clock signal at locked rotor	t_3 / t_4 typical: 0,18 s / 11 s	



3.5 Aerodynamics

Measurement conditions:

Measured with a double chamber intake rig acc. to DIN EN ISO 5801.

Air density = 1,05 kg/m³; Temperature 23°C +/- 3°C;

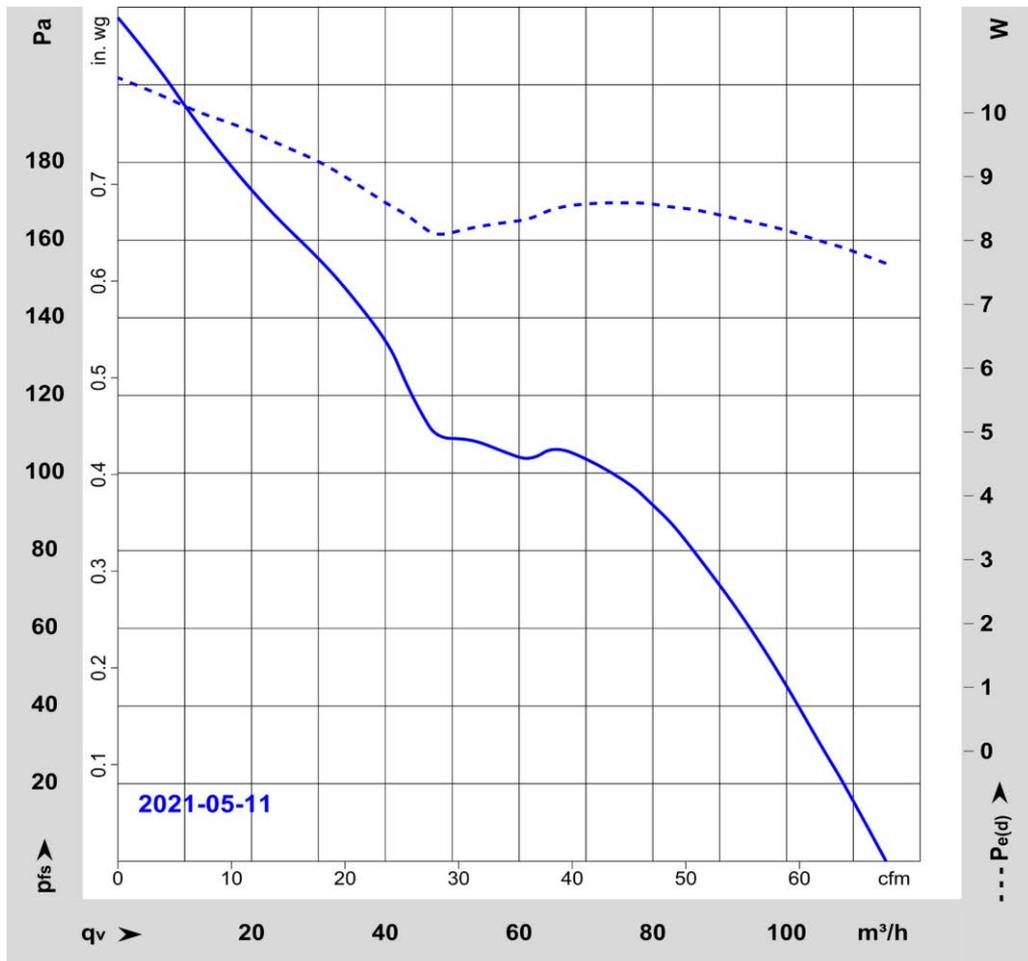
In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal.

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:

7.600 1/min at free air flow	PWM 100 %; f: 25 kHz		
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Max. free-air flow ($\Delta p = 0 / \dot{V} = \text{max.}$)	115 m ³ /h	
Max. static pressure ($\Delta p = \text{max.} / \dot{V} = 0$)	220 Pa	



3.6 Sound Data

Measurement conditions: Sound pressure level: 1 meter distance between microphone and the air intake.
 Sound power level: According to ISO 10302-1
 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:

7.600 1/min at free air flow	PWM 100 %; f: 25 kHz		
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Optimal operating point	83 m3/h @ 85 Pa		
Sound power level at the optimal operating point	6,4 bel(A)		
Sound pressure level at free air flow, measured in rubber bands	52 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 heat, constant; according to DIN EN 60068-2-78, 14 days	
Water exposure	None	
Dust requirements	None	
Salt fog requirements	None	

Permitted application area:

The product is intended for use in sheltered rooms with controlled temperature and controlled humidity. Directly exposure to water must be avoided.

Pollution degree 1 (according DIN EN 60664-1)

There is either no pollution or it occurs only dry, non-conductive pollution. The pollution has no negative impact.

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

4.3 EMC

Kind	Radiated Emission; 30 MHz - 1000 MHz
According	DIN EN 55032:2016-02
Check accuracy / Limit	Class B
Result	Below limit Class B

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
UKCA	UK Conformity Assessed	Not applicable
EAC	Eurasian Conformity	Yes
America	UL - Underwriters Laboratories	Yes / UL507, Electric Fans E38324
Europe	VDE - Association for Electrical or UL - Underwriters Laboratories or comparable	Yes / Approval acc. to EN 62368 - Audio/video, information and communication technology equipment
Canada	UL - Underwriters Laboratories or CSA - Canadian Standards Association	Yes / C22.2 No. 113 Fans and Ventilators
China	CCC - China Compulsory Certification or CQC - China Quality Certification	Not applicable

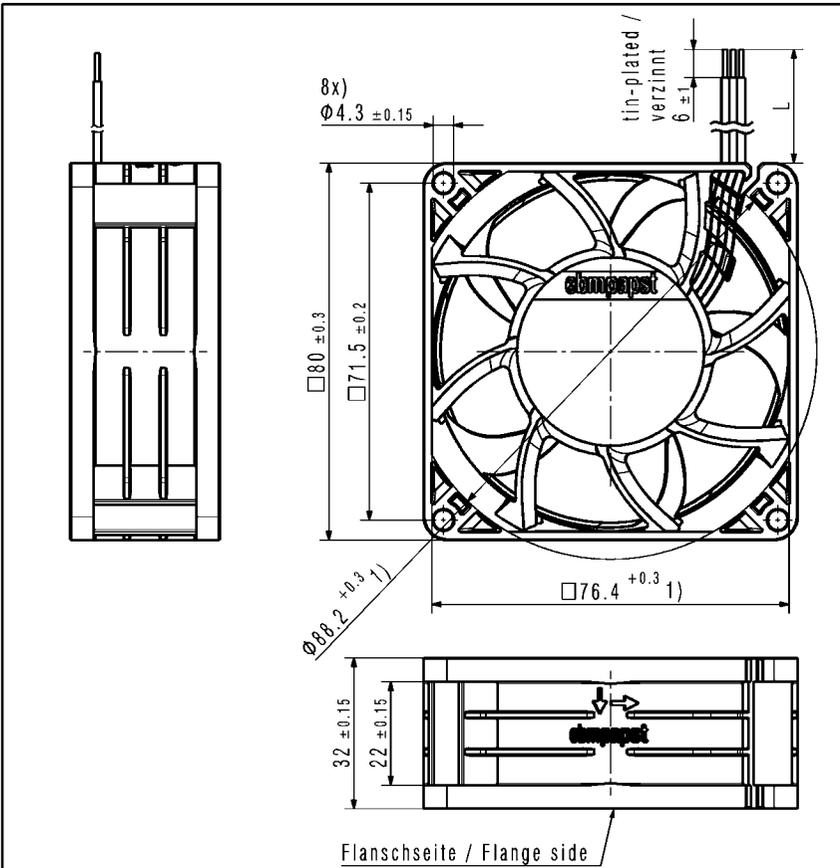
6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	57.500 h	
Life expectancy L10 at TU max.	25.000 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	100.000 h	

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Schutzvermerk nach DIN ISO 9016 beachten!
Refer to protection notice DIN ISO 9016!



- 1) Maße für Montagewand / Dimensions for assembly wall
 - Kein Axialspiel der Kugellager durch Federausgleich / no axial clearance of ball bearings due to a pre-load spring
 - Anzahl und Länge der Litzen siehe Produktspezifikation Blatt 1
 Number and length of the wires see design specification sheet 1

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9292910101 0PR000A				Artikel / Title:	Gewicht / Mass (g):
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