Product Data Sheet 3314 N/39H3U

ebmpapst

The engineer's choice



GREEN TECH

3314 N/39H3U

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1 General

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

2 Mechanics

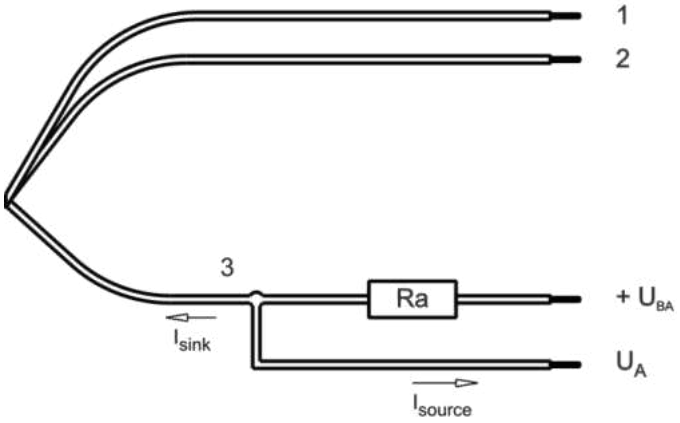
2.1 General

Width	92,0 mm	
Height	92,0 mm	
Depth	32 mm	
Mass	0,19 kg	
Housing material	Plastic	
Impeller material	Plastic	

2.2 Connections

Electrical connection	Cable	
Lead wire length Tolerance	See drawing	
Plug	See drawing	
Contact	See drawing	





Wire	Color	Operation	Wire size	Insulation diameter
1	red	+ UB	AWG 20	1,5 mm
2	black	- GND	AWG 20	1,5 mm
3	brown	Alarm	AWG 20	1,5 mm

3 Operating Data

3.1 Electrical Operating Data

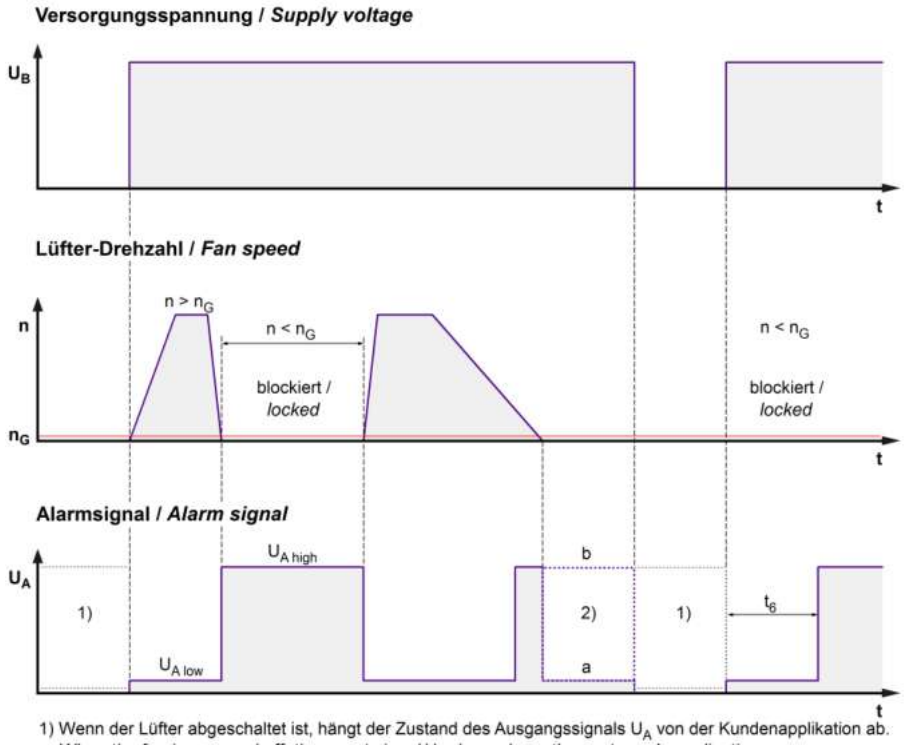
Measurement conditions: Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

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

Features	Condition	Symbol	Values		
Voltage range		U	18 V		28,8 V
Nominal voltage		U_N		24 V	
Power consumption Tolerance	$\Delta p = 0$ 0010	P	3,2 W +- 17,5 %	6 W +- 12,5 %	9,2 W +- 15 %
Current consumption Tolerance	$\Delta p = 0$ 0010	I	180 mA +- 17,5 %	250 mA +- 12,5 %	320 mA +- 15 %
Speed Tolerance	$\Delta p = 0$ 0010	n	3.500 1/min +- 12,5 %	4.350 1/min +- 7,5 %	4.930 1/min +- 10 %
Starting current consumption				1.800 mA	

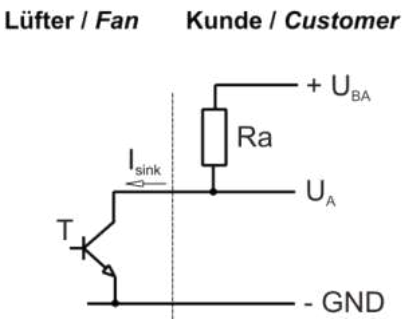
3.2 Electrical Interface - Output

Alarm type	/39 (low = ok, open collector)



1) Wenn der Lüfter abgeschaltet ist, hängt der Zustand des Ausgangssignals U_A von der Kundenapplikation ab.
When the fan is powered off, the ouput 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.

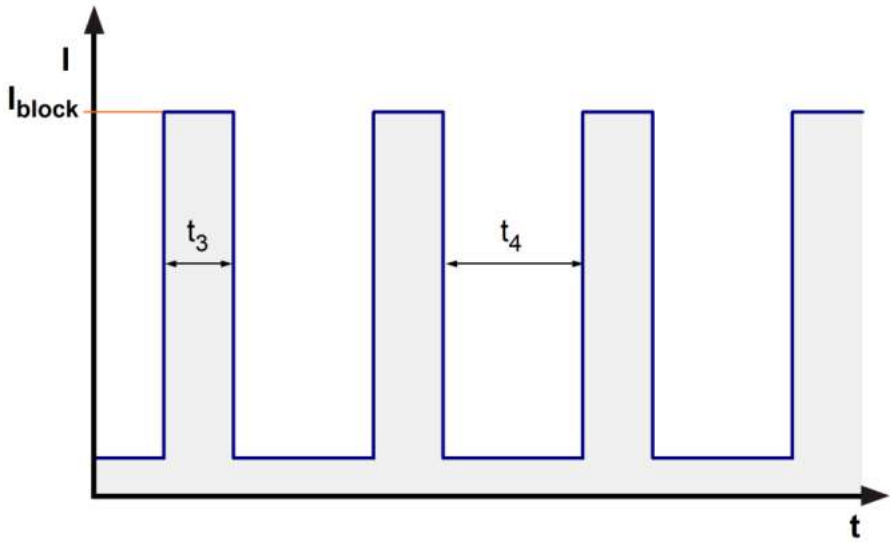
$$Ra = \frac{U_{BA} - U_{A\,low}}{I_{sink}}$$



Features		Note	Values
Alarm operating voltage	U_{BA}		60 V
Alarm signal Low	$U_{A\,low}$	I sink: 2 mA	< 0,4 V
Maximum sink current	I_{sink}		20 mA
External resistor		External resistor Ra from UBA to UA required. All voltage measured to GND.	
Alarm start-up delay time	t_6		< 1 s
Alarm trip speed limit	n_G		0 1/min
Alarm at sense failure		No	
Alarm latch		No	
Alarm isolated from motor		No	

3.3 Electrical Features

Electronic function	None	
Reversed polarity protection Max. residual current at U_N	Rectifying diode I_F < 100 uA	
Locked rotor protection	Auto restart	
Locked rotor current at U_N	I_{block} approx. 1.800 mA	
Clock signal at locked rotor	t_3 / t_4 typical: 0,4 s / 10 s	



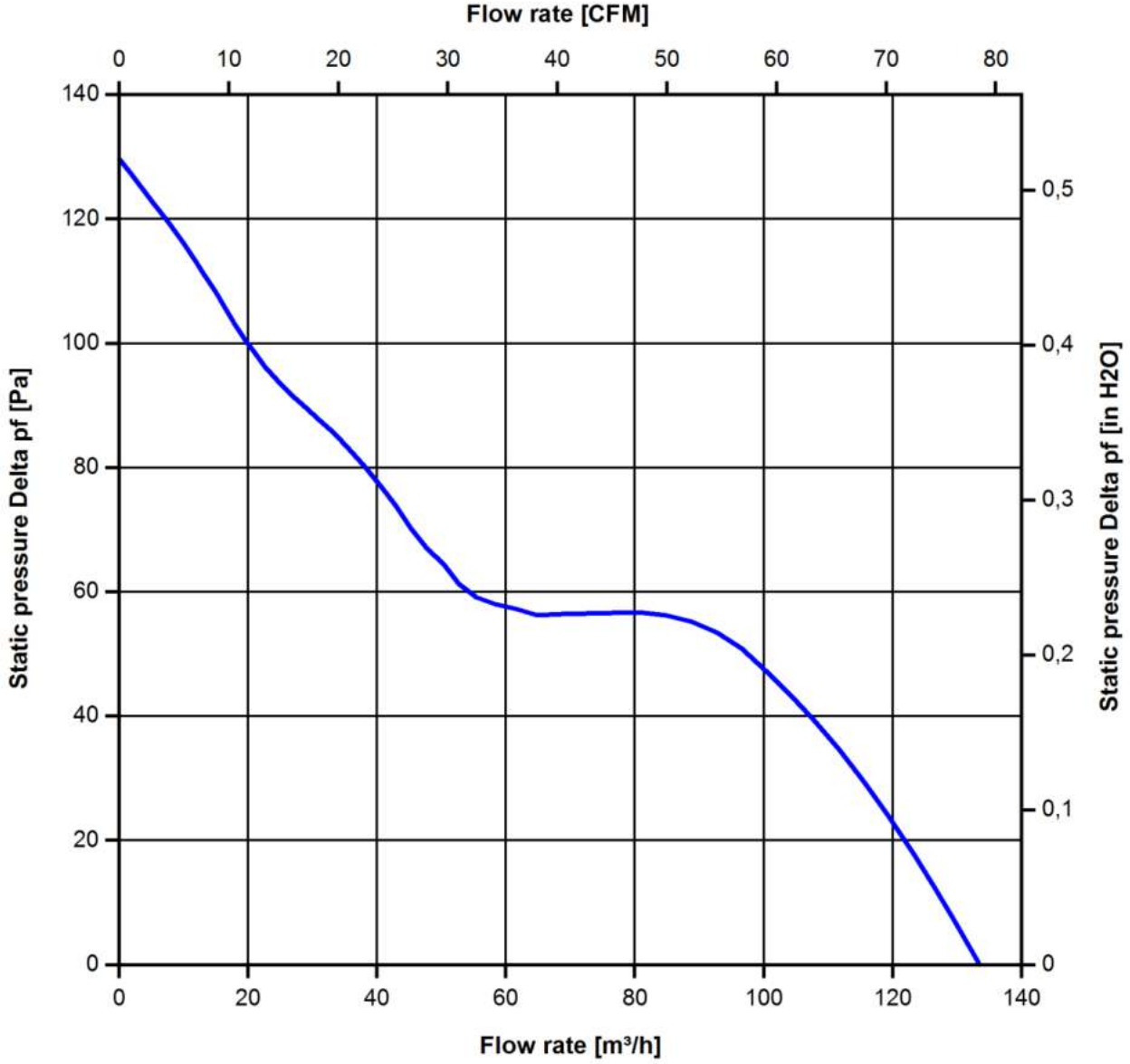
3.4 Aerodynamics

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.

a.) Operation condition:

4.350 1/min at free air flow

Max. free-air flow (Δp = 0 / $\dot{V}$ = max.)	133,0 m3/h	
Max. static pressure (Δp = max. / $\dot{V}$ =0)	130 Pa	



3.5 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 semianchoic chamber with a background noise level of Lp(A) < 5 dB(A) For further measurement conditions see chapter aerodynamics.

a.) Operation condition:

4.350 1/min at free air flow

Optimal operating point	84,0 m3/h @ 51 Pa	
Sound power level at the optimal operating point	6,0 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	50,0 dB(A)	

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	

Elektronische Baugruppe des Lüfters ausschließlich mit schwefelresistenten Widerständen (Vishay RCA) gefertigt.

Leiterplatte (Wicklung kpl.) Parylene beschichtet

Magnetmaterial (Basiskautschuk) aus NBR

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	Splash water check IPX4; according to DIN EN 60529 VDE 0470, not certified	
Dust requirements	Dust check IP5X; according to DIN EN 60529 VDE 0470, not certified	
Salt fog requirements	salt fog, cyclic, in operation; according to DIN EN 60068-2-52, 3 cycle	

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 3 (according DIN EN 60664-1)
It occurs conductive pollution or dry non-conductive pollution which becomes conductive due to condensation.

4.3 Mechanical Requirements

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 m² / s³ 20 - 500 Hz : - 3 dB / Oct 0,91 G 3 3 x 30 min
	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 - 10 Hz : +6 dB / Oct 10 - 50 Hz : 1,0 m^2 / s^3 50 - 200 Hz : - 6 dB / Oct 0,65 G 3 3 x 30 min
	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

5 Safety

5.1 Electrical Safety

Dielectric strength DIN EN 60950 (VDE 0805) and DIN EN 60335 (VDE 0700) 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
VDE	Association for Electrical, Electronic and Information Technologies	Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment
CSA	Canadian Standards Association	Yes / C22.2 No. 113 Fans and Ventilators
CCC	China Compulsory Certification	Not applicable

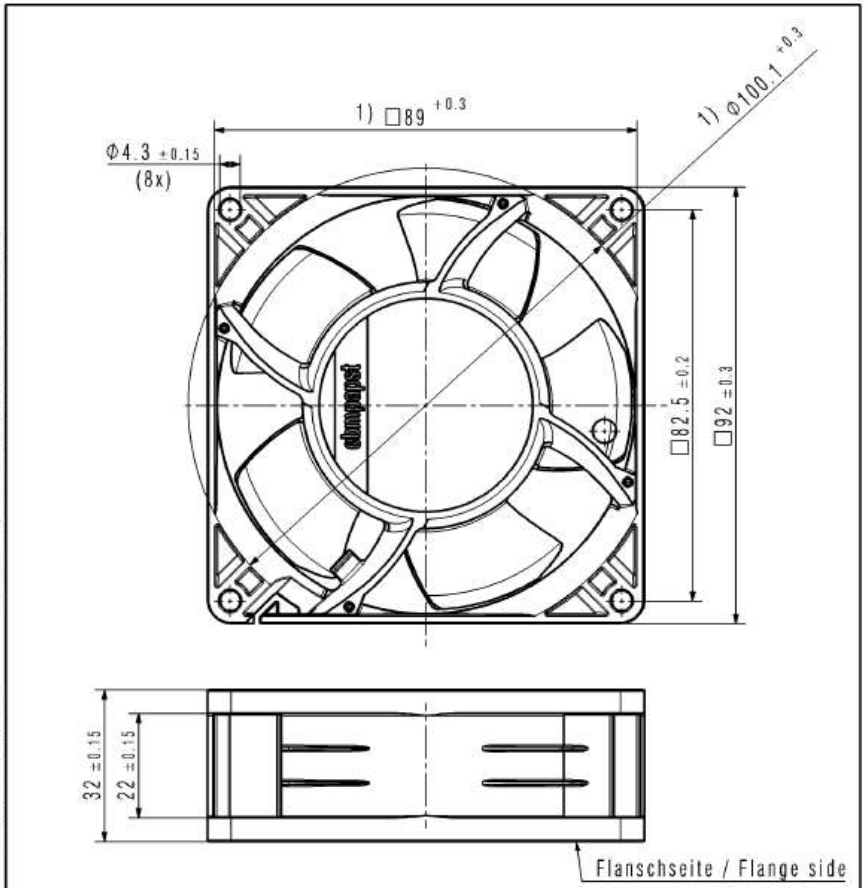
6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	50.000 h	
Life expectancy L10 at TU max.	22.500 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	85.000 h	

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Refer to protection notice DIN ISO 16016!



1) Maße für Montagewand / Dimensions for assemlby wall
- Kein Axialspiel der Kugellager durch Federausgleich / no axial clearance of ball bearings due to a pre-load spring

FR	V5R24	PAPST	Werkstoff / Material:	Volumen / Volume (mm³): 84.235,300			
Dokument-Status / Document-State	CATIA-Version/ CATIA-Version	CAD-Umgebung/ CAD-Environment		Gewicht / Mass (g):			
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	3D-Referenzmodell / 3D-Reference model						
Tolerierung / Tolerances: Size ISO 14405 Ⓔ		Datum / Name					
	Bearb./ Drawn	06.10.2016 RUEHLE					
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