Product Data Sheet 4600N

ebmpapst

Die Wahl der Ingenieure



GREEN TECH

4600N

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6.1 General 9

1 General

Fan type	Axial fan
Rotating direction looking at rotor	Clockwise
Airflow direction	Air intake over struts
Bearing system	Sleeve bearing
Mounting position	Any
Balancing grade	2,5

2 Mechanics

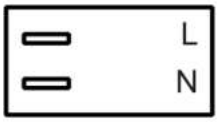
2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	38,0 mm	
Diameter	0,0 mm	
Mass	0,550 kg	
Housing material	Metal	
Impeller material	Metal	
Max. torque when mounted across both mounting flanges Screw size	wire outlet corner: 190 Ncm remaining corners: 310 Ncm ISO 4762 - M4 degreased, without an additional brace and without washer	

2.2 Connections

Electrical connection	Plug	
Lead wire length Tolerance	See drawing	
Tube length Tolerance	See drawing	
Wire size (AWG)	--	
Insulation diameter	--	
Plug	See drawing	
Contact	See drawing	





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 section 3.4)
I: corresp. to RMS line current

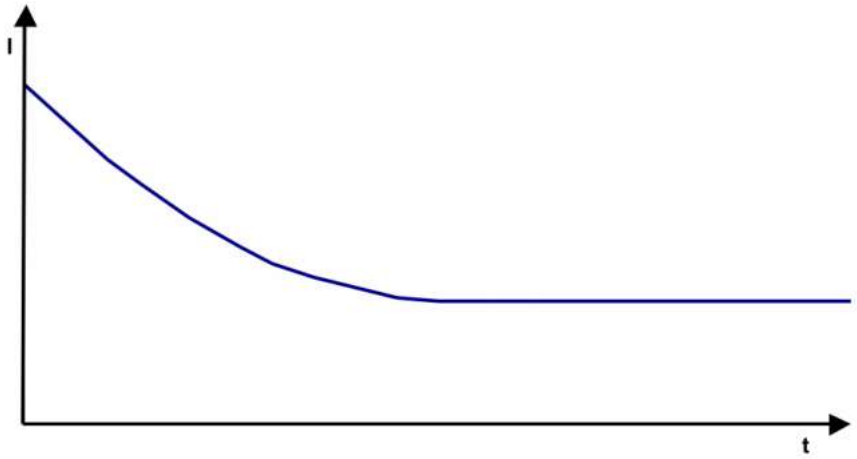
Features	Condition	Symbol	Values	
Frequency	$\Delta p = 0$	f	50 Hz	60 Hz
Nominal voltage Tolerance	$\Delta p = 0$	U_N	115,0 V +- 10,0 %	115,0 V +- 10,0 %
Power consumption Tolerance	$\Delta p = 0$	P	19,0 W + 5,0 % - 10,0 %	18,0 W + 5,0 % - 10,0 %
Speed Tolerance	$\Delta p = 0$	n	2.650 1/min +- 3,0 %	3.100 1/min +- 3,0 %

3.2 Operating Data - Electrical Interface - Output

Tacho type	None

3.3 Electrical Features

Locked rotor protection	Impedance
Locked rotor current at Un	



3.4 Aerodynamics

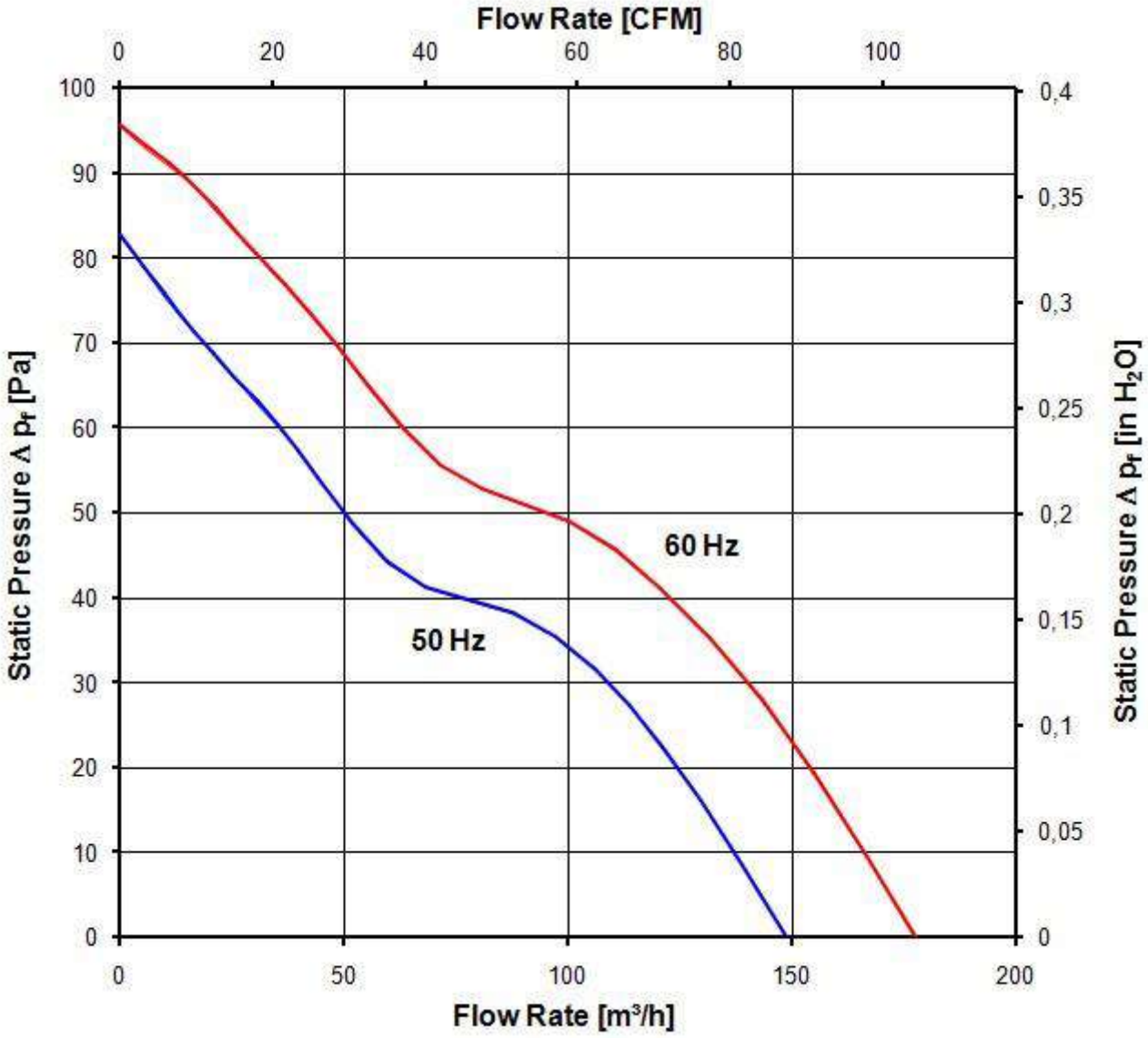
Measurement conditions:	Measured with a double chamber intake rig acc. to DIN EN ISO 5801. Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; In the intake and outlet area should not be any solid obstruction within 0,5 m. The information is only valid under the specified test conditions and may 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:
2.650 1/min at free air flow Frequency: 50 Hz

Max. free-air flow (Δp = 0 / $\dot{V}$ = max.)	148,0 m3/h
Max. static pressure (Δp = max. / $\dot{V}$ =0)	82 Pa

b.) Operation condition:
3.100 1/min at free air flow Frequency: 60 Hz

Max. free-air flow (Δp = 0 / $\dot{V}$ = max.)	178,0 m3/h
Max. static pressure (Δp = max. / $\dot{V}$ =0)	95 Pa


Flow Rate [CFM]
0
20
40
60
80
100
Static Pressure Δ pf [Pa]
100
90
80
70
60
50
40
30
20
10
0
Static Pressure Δ pf [in H2O]
0,4
0,35
0,3
0,25
0,2
0,15
0,1
0,05
0
60 Hz
50 Hz
0
50
100
150
200
Flow Rate [m³/h]

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 section 3.4

a.) Operation condition:
2.650 1/min at free air flow Frequency: 50 Hz

Optimal operating point	114,0 m3/h @ 24 Pa	
Sound power level at the optimal operating point	5,5 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	45,0 dB(A)	

b.) Operation condition:
3.100 1/min at free air flow Frequency: 60 Hz

Optimal operating point	126,0 m3/h @ 32 Pa	
Sound power level at the optimal operating point	5,8 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	49,0 dB(A)	

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-10 °C / 50 Hz -10 °C / 60 Hz	
Max. permitted ambient temperature TU max.	55 °C / 50 Hz 60 °C / 60 Hz	
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	

*) Permittet 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.

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.	1000 VAC / 1 Min. 1500 VAC / 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 > 50 MOhm
clearance / creepage distance	2,0 mm / 1,1 mm
Protection class	I

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	Yes / GB 12350 Safety Requirements for small Power Motors

The approval tests are observed to:
U approval max.: 115 V / f: 60 Hz @ TU approval max.: 60 °C

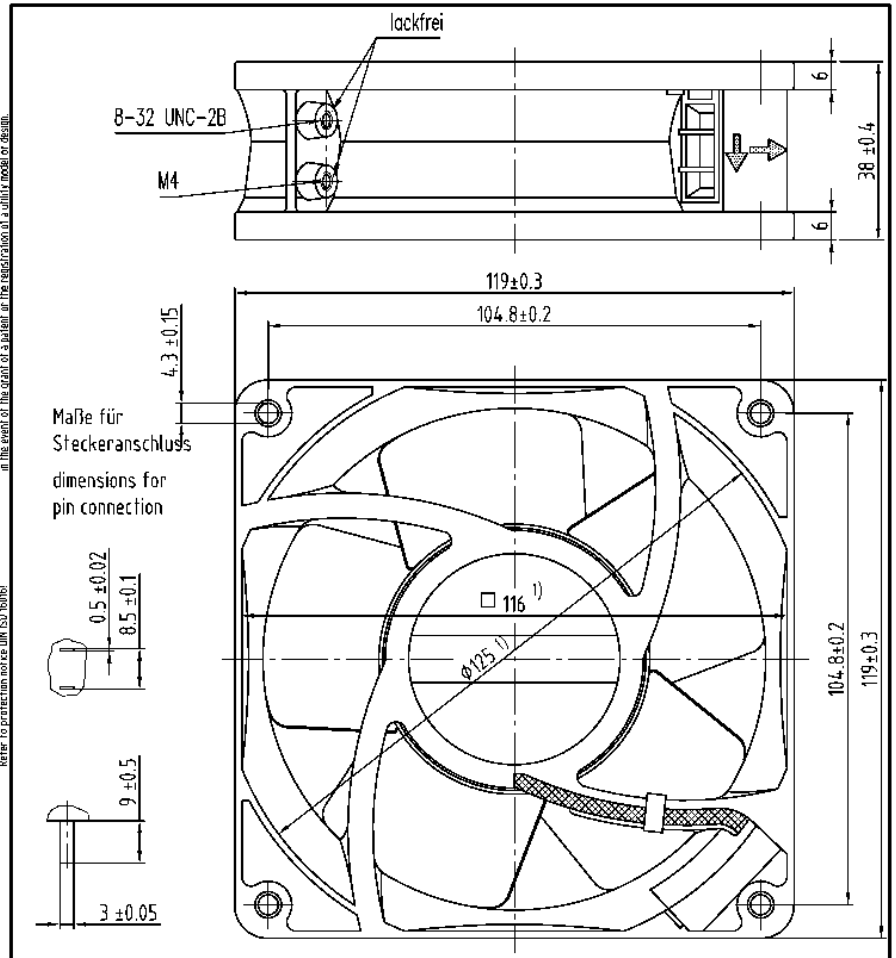
6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	37.500 h / 50 Hz 40.000 h / 60 Hz	
Life expectancy L10 at TU max.	27.500 h / 50 Hz 25.000 h / 60 Hz	

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1) Maße für Montagewand

Axialspiel bei
- Kugellagerung (K): 0 (mit Federausgleich)
- Gleitlagerung (G): 0.1 – 0.6

1) dimensions for assembly wall

axial clearance by
- ball bearing (K): 0 (with spring compensation)
- sleeve bearing (G): 0.1 – 0.6

			ebmpapst	Werkstoff/Material:	Volumen/Volume [mm³]:
SAP-Status/Statz	Aend.-Nr./Change-No.	AutoLAD-System-Version	CAD-Umgebung/ CAD-Environment		Gewicht/Mass [g]:
		Datum/Date	Name/Name		
Toleranzierung/Tolerances:		Bearb./ Drawn		Artikel/Title	
		Gepr./ Checked			
Allgemeintoleranzen/Gen. tolerances:		Freig./ Release			
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