

Product Data Sheet 4184 NXHU

**ebmpapst**

The engineer's choice



**4184 NXHU****INDEX**

<b>1</b>	<b>General</b> .....	<b>3</b>
<b>2</b>	<b>Mechanics</b> .....	<b>3</b>
2.1	General.....	3
2.2	Connections.....	3
<b>3</b>	<b>Operating Data</b> .....	<b>4</b>
3.1	Electrical Operating Data .....	4
3.2	Electrical Features .....	4
3.3	Aerodynamics.....	6
3.4	Sound Data.....	7
<b>4</b>	<b>Environment</b> .....	<b>7</b>
4.1	General.....	7
4.2	Climatic Requirements .....	7
<b>5</b>	<b>Safety</b> .....	<b>8</b>
5.1	Electrical Safety .....	8
5.2	Approval Tests .....	8
<b>6</b>	<b>Reliability</b> .....	<b>8</b>
6.1	General.....	8

## 1 General

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

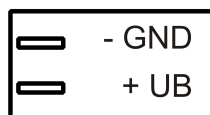
## 2 Mechanics

### 2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	38,0 mm	
Mass	0,400 kg	
Housing material	Metal	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges Screw size	Wire outlet corner: 170 Ncm Remaining corners: 300 Ncm ISO 4762 - M3 degreased, without an additional brace and without washer	

### 2.2 Connections

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



### 3 Operating Data

#### 3.1 Electrical Operating Data

Measurement conditions: Normal air density = 1,2 kg/m<sup>3</sup>; 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	12 V		25 V
Nominal voltage		U <sub>N</sub>		24 V	
Power consumption	$\Delta p = 0$	P	2,6 W	11 W	13,1 W
Tolerance	0010		+/- 17,5 %	+/- 12,5 %	+/- 15 %
Current consumption	$\Delta p = 0$	I	216 mA	458 mA	525 mA
Tolerance	0010		+/- 17,5 %	+/- 12,5 %	+/- 15 %
Speed	$\Delta p = 0$	n	2.630 1/min	4.400 1/min	4.500 1/min
Tolerance	0010		+/- 12,5 %	+/- 7,5 %	+/- 10 %
Starting current consumption				2.000 mA	

#### 3.2 Electrical Features

Electronic function	None	
Reversed polarity protection	Rectifying diode	
Max. residual current at U <sub>N</sub>	I <sub>F</sub> <= 10 mA	
Locked rotor protection	Auto restart	
Locked rotor current at U <sub>N</sub>	I <sub>block</sub> approx. 2.000 mA	
Clock signal at locked rotor	t <sub>3</sub> / t <sub>4</sub> typical: 0,6 s / 10 s	



### 3.3 Aerodynamics

Measurement conditions:

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

Normal air density = 1,2 kg/m<sup>3</sup>; Temperature 23°C +/- 3°C;

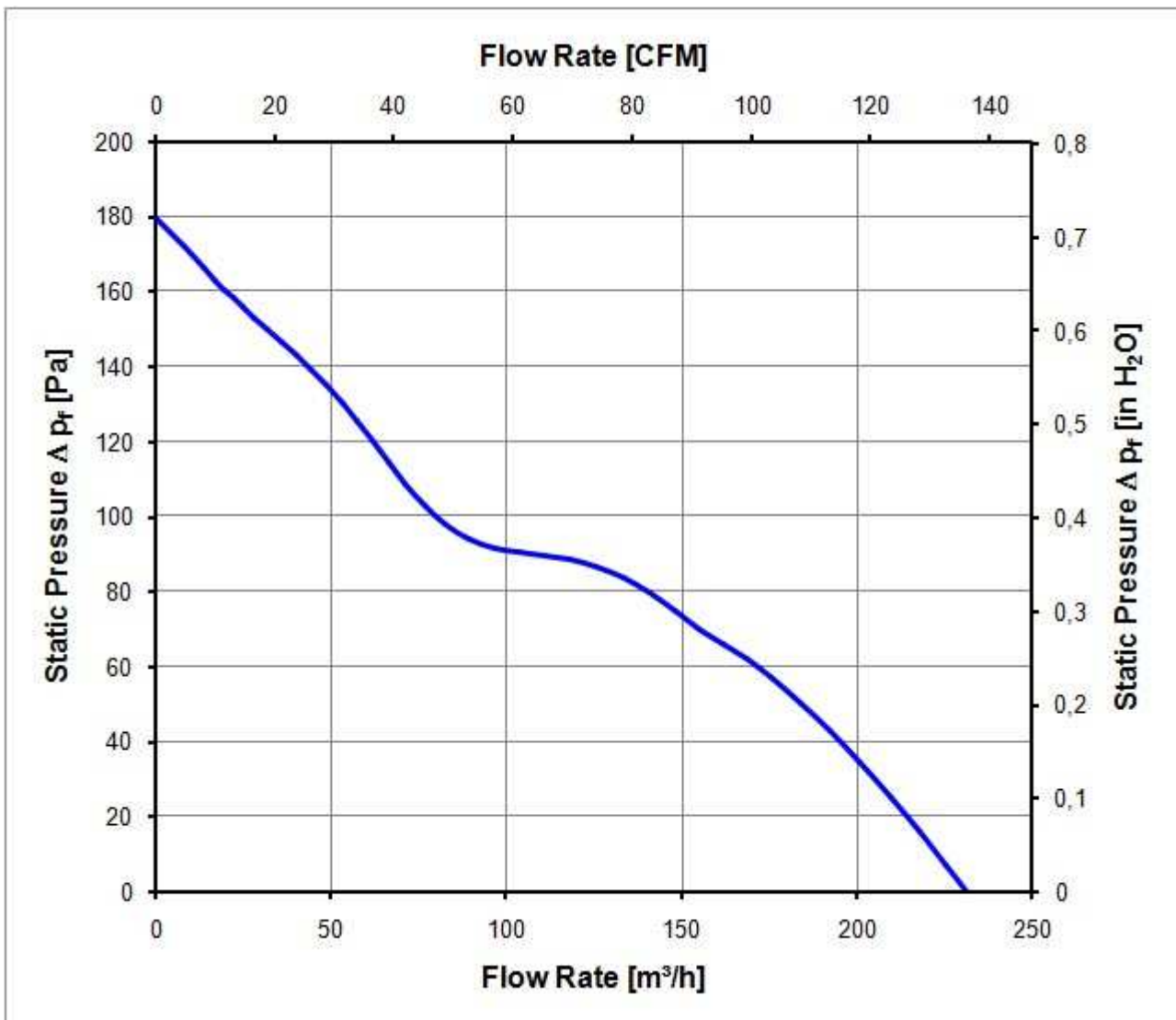
In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal.

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:

4.400 1/min at free air flow

Max. free-air flow ( $\Delta p = 0 / \dot{V} = \max.$ )	227,0 m <sup>3</sup> /h	
Max. static pressure ( $\Delta p = \max. / \dot{V} = 0$ )	180 Pa	



**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 semianchoic chamber with a background noise level of  $L_p(A) < 5 \text{ dB(A)}$   
 For further measurement conditions see chapter aerodynamics.

a.) Operation condition:

4.400 1/min at free air flow		
Optimal operating point	130,0 m <sup>3</sup> /h @ 79 Pa	
Sound power level at the optimal operating point	6,2 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	56,0 dB(A)	

**4 Environment**

**4.1 General**

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	55 °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	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.

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

**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.	500 VAC / 1 Min.	
B.) Routine test Measuring conditions: At indoor climate. No arcing or breakdown is allowed! All connections together to ground.	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 / UL audited by CSA according to 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**

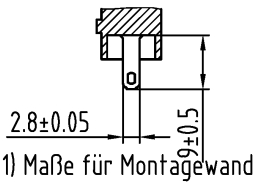
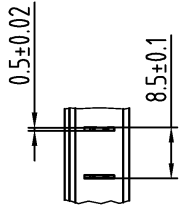
Life expectancy L10 at TU = 40 °C	70.000 h	
Life expectancy L10 at TU max.	50.000 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	117.500 h	



Copying of this document, and giving it to others and the use or communication of the contents thereof, are forbidden without express authority. Offenders are liable to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

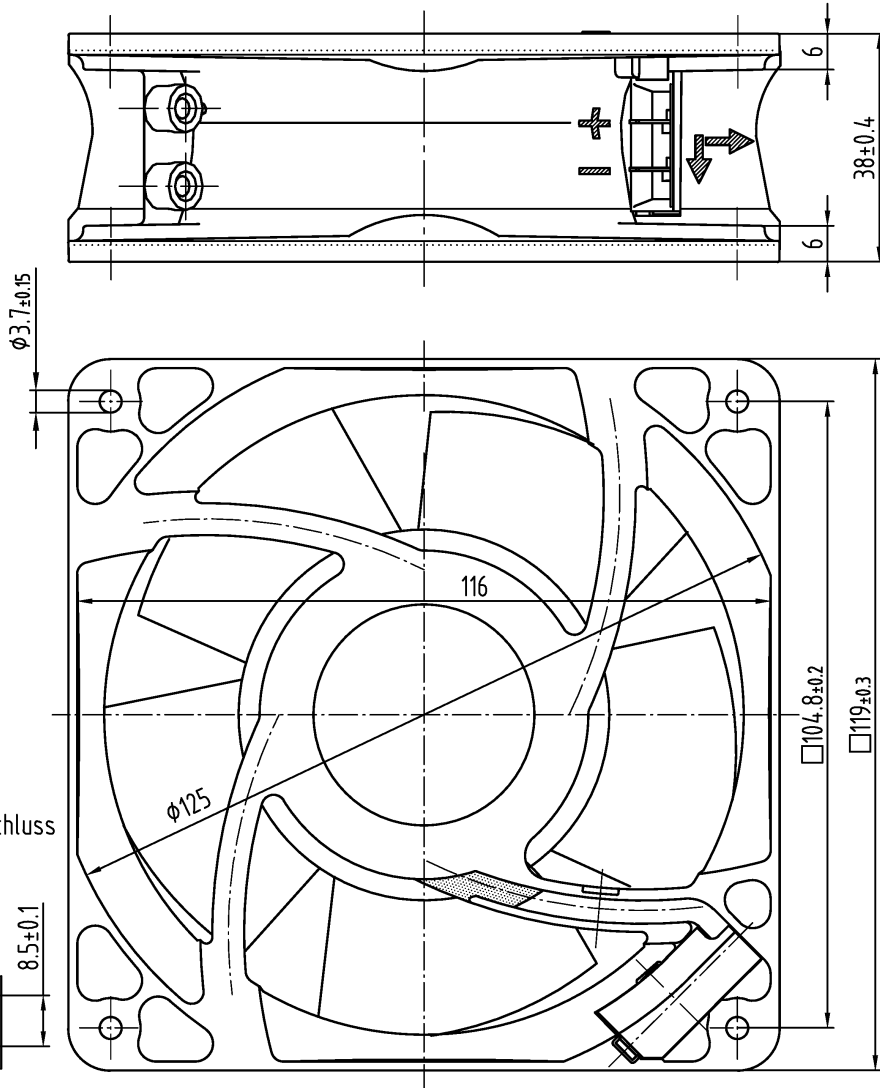
Schutzvermerk nach DIN ISO 16016 beachten/  
Refer to protection notice DIN ISO 16016!

Maße für Steckeranschluss



1) Maße für Montagewand

- Axialspiel mit Feder spielfrei verspannt.



Tolerierung/Tolerances: DIN 7167		Allgemeintoleranzen/Gen. tolerances: Längenmaße: 130 DIN 16901 Winkel, Form u. Lage: DIN ISO 2768-mK-E		Artikel/Title		Massstab/scale			
Datum/Date		Name/Name				Zchg.-Nr./Dwg.-No.:		Blatt/Page	
Bearb./Drawn:		Index/Index							
gepr. u. zur Verwendung freigeben/Checked for release by		am on		<b>ebmpapst</b> ebm-papst St. Georgen GmbH & Co. KG		Ers.f.Zchg./Replaces:		A4	