Product Data Sheet 4188NXM-116

ebmpapst

The engineer's choice



GREEN TECH

4188NXM-116

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1 General

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

2 Mechanics

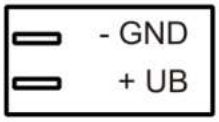
2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	38,0 mm	
Mass	0,390 kg	
Housing material	Metal	
Impeller material	Plastic	

2.2 Connections

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





3 Operating Data

3.1 Electrical Operating Data

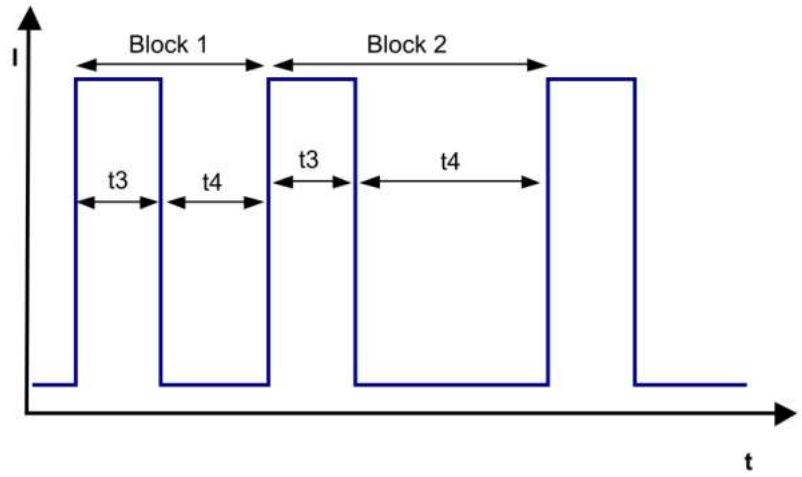
Measurement conditions: Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

$\Delta p = 0$: corresp. to free air flow (see section 3.5)
I: corresp. to arithm. mean current value

Features	Condition	Symbol	Values		
Voltage range		U	36 V		60 V
Nominal voltage		U_N		48 V	
Power consumption Tolerance	$\Delta p = 0$ 0010	P	1,9 W +- 17,5 %	3,5 W +- 12,5 %	5,6 W +- 15 %
Current consumption Tolerance	$\Delta p = 0$ 0010	I	53 mA +- 17,5 %	75 mA +- 12,5 %	93 mA +- 15 %
Speed Tolerance	$\Delta p = 0$ 0010	n	2.230 1/min +- 12,5 %	2.800 1/min +- 7,5 %	3.400 1/min +- 10 %
Starting current consumption				400 mA	

3.2 Electrical Features

Electronic function	None	
Reversed polarity protection Max. residual current at U_N	Rectifying diode I_F <= 50 µA	
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: 0,6 s / 10 s	



Block1: special locked rotor protection: 5 cycles t3 / t4 = 0,6 s / 1 s
Block2: locked rotor protection t3 / t4 = 0,6 s / 10 s

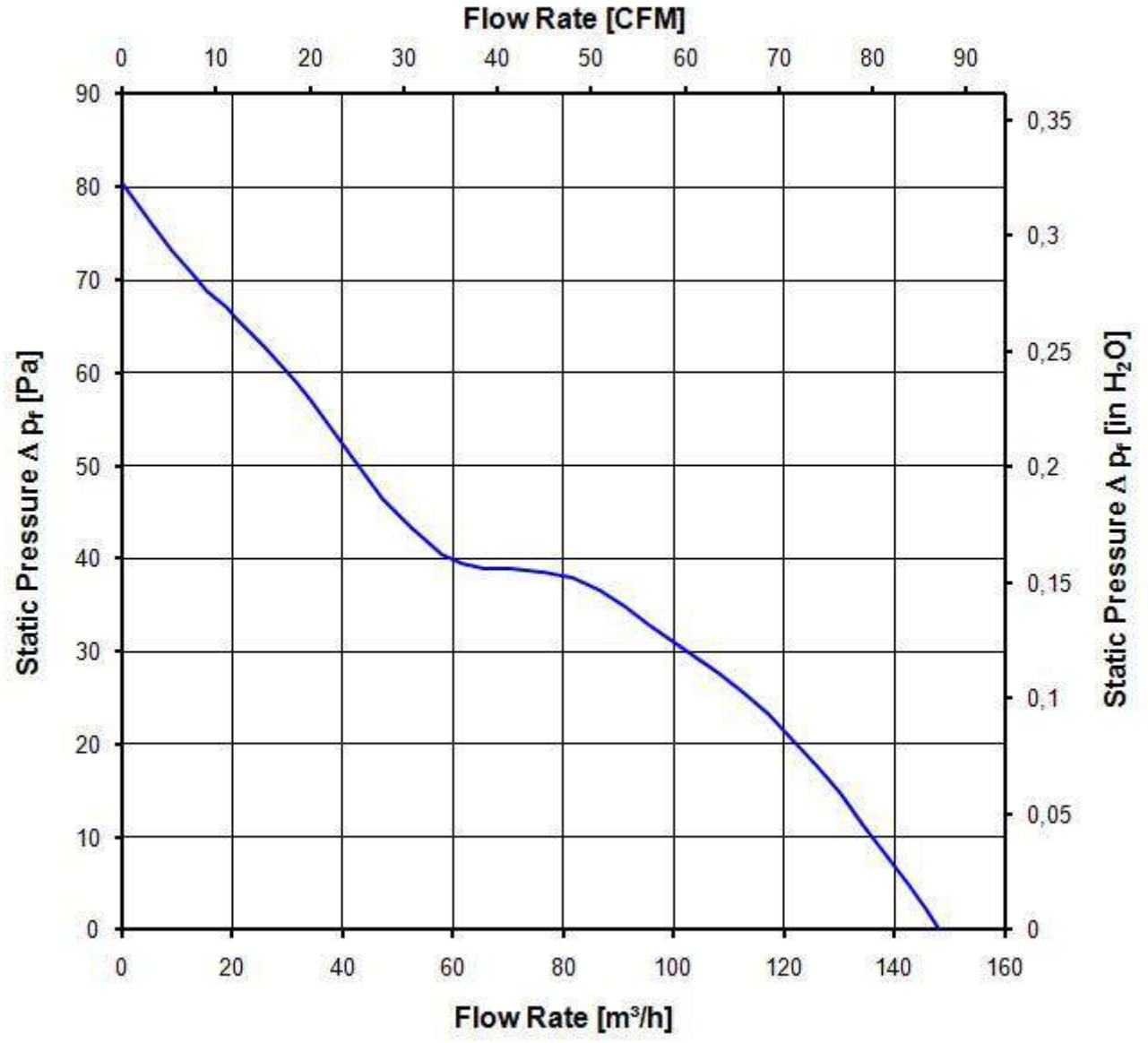
3.3 Aerodynamics

Measurement conditions:	Measured with a double chamber intake rig acc. to DIN EN ISO 5801. Normal air density = 1,2 kg/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:

2.800 1/min at free air flow

Max. free-air flow (Δp = 0 / V̇ = max.)	148,0 m3/h	
Max. static pressure (Δp = max. / V̇ =0)	80 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 Lp(A) < 5 dB(A) For further measurement conditions see section 3.5

a.) Operation condition:

2.800 1/min at free air flow

Optimal operating point	86,0 m3/h @ 33 Pa	
Sound power level at the optimal operating point	5,1 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	43,0 dB(A)	

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-30 °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	

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.

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. 500 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 > 10 MOhm	
clearance / creepage distance	1,0 mm / 1,5 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	Yes / GB 12350 Safety Requirements for small Power Motors

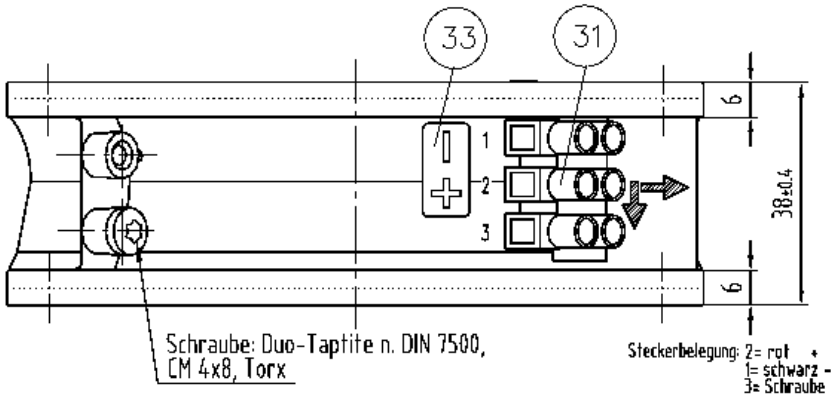
6 Reliability

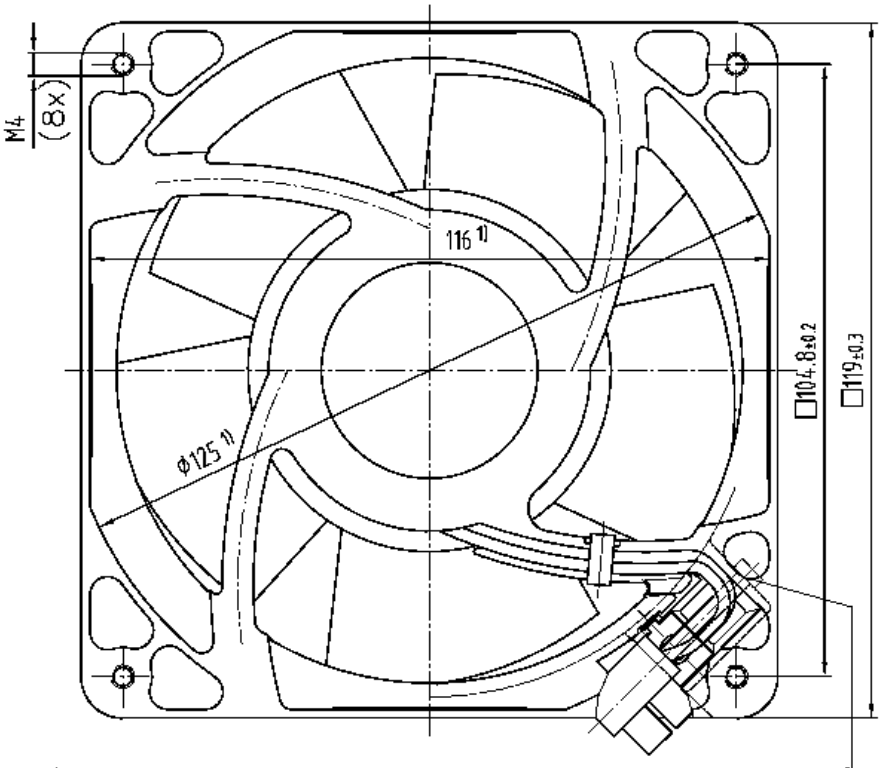
6.1 General

Life expectancy L10 at TU = 40 °C	85.000 h	
Life expectancy L10 at TU max.	37.500 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	142.500 h	

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1) Maße für Durchbruch in Montagewand

Axialspiel bei
Kugellagerung :(K) 0 (mit Federausgleich)
Gleitlagerung :(G) 0,1-0,6

Tolerierung/Tolerances:	DIN 7167		
Allgemeintoleranzen/ Gen. tolerances:	DIN 2768 g		

gilt für

G	929 4310 114	4184 NGX-114
G	929 4310 115	4182 NGX-115
G	929 4310 116	4188 NXM-116

	Datum/Date	Name/Name
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