Product Data Sheet 4114 NU

ebmpapst

The engineer's choice



GREEN TECH

4114 NU

INDEX

1 General 3
2 Mechanics 3
2.1 General 3
2.2 Connections 3
3 Operating Data 4
3.1 Operating Data - Electrical Interface - Input 4
3.2 Electrical Operating Data 5
3.3 Operating Data - Electrical Interface - Output 5
3.4 Electrical Features 6
3.5 Aerodynamics 7
3.6 Sound Data 8
4 Environment 8
4.1 General 8
4.2 Climatic Requirements*) 8
5 Safety 9
5.1 Electrical Safety 9
5.2 Approval Tests 9
6 Reliability 9
6.1 General 9

1 General

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

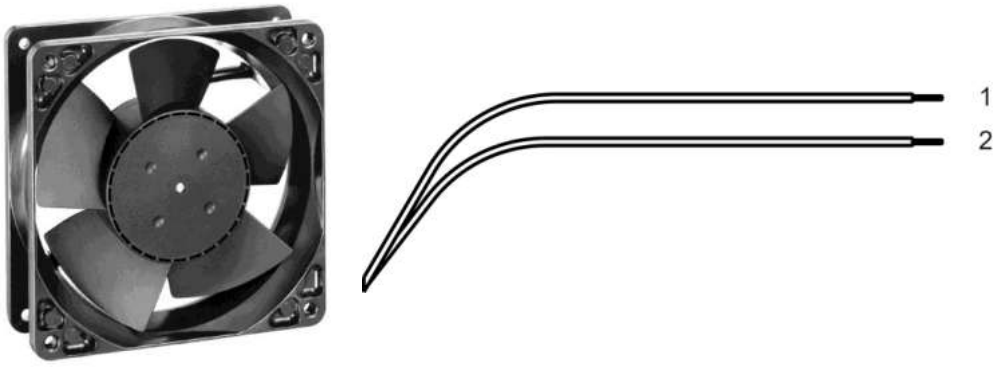
2 Mechanics

2.1 General

Width	119 mm	
Height	119 mm	
Depth	38 mm	
Mass	0,400 kg	
Housing material	Metal	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges Screw size	wire outlet corner: 450 Ncm remaining corners: 600 Ncm ISO 4762 - M4 degreased, without an additional brace and without washer	

2.2 Connections

Electrical connection	Wires	
Lead wire length Tolerance	L = 310 mm +- 10 mm	
Wire size (AWG)	22	
Insulation diameter	1,70 mm	
Contact	See drawing	



	Colour	Operation
Wire 1	red	+ UB
Wire 2	blue	- GND

3 Operating Data

3.1 Operating Data - Electrical Interface - Input

Control input	None

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.

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

Features	Condition	Symbol	Values		
Voltage range	∆p = 0	U	12 V		29 V
Nominal voltage	∆p = 0	U_N		24 V	
Power consumption Tolerance	∆p = 0 0010	P	1,3 W +- 17,5 %	5 W +- 12,5 %	8,7 W +- 15 %
Current consumption Tolerance	∆p = 0 0010	I	108 mA +- 17,5 %	208 mA +- 12,5 %	300 mA +- 15 %
Speed Tolerance	∆p = 0 0010	n	1.680 1/min +- 12,5 %	3.200 1/min +- 7,5 %	3.750 1/min +- 10 %

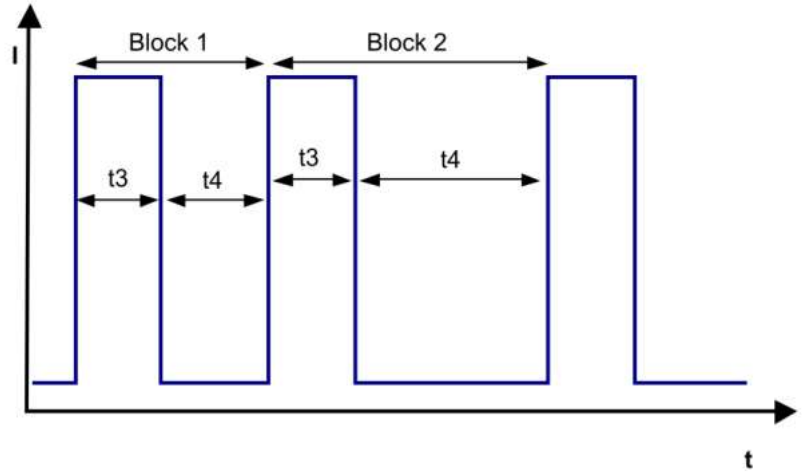
3.3 Operating Data - Electrical Interface - Output

Tacho type	None

Alarm type	None

3.4 Electrical Features

Electronic function	None	
Reversed polarity protection Max. residual current at Un	Rectifying diode IF <= 500 uA	
Locked rotor protection	Auto restart	
Locked rotor current at Un	approx. 970 mA	
Clock signal t3/t4 at locked rotor	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

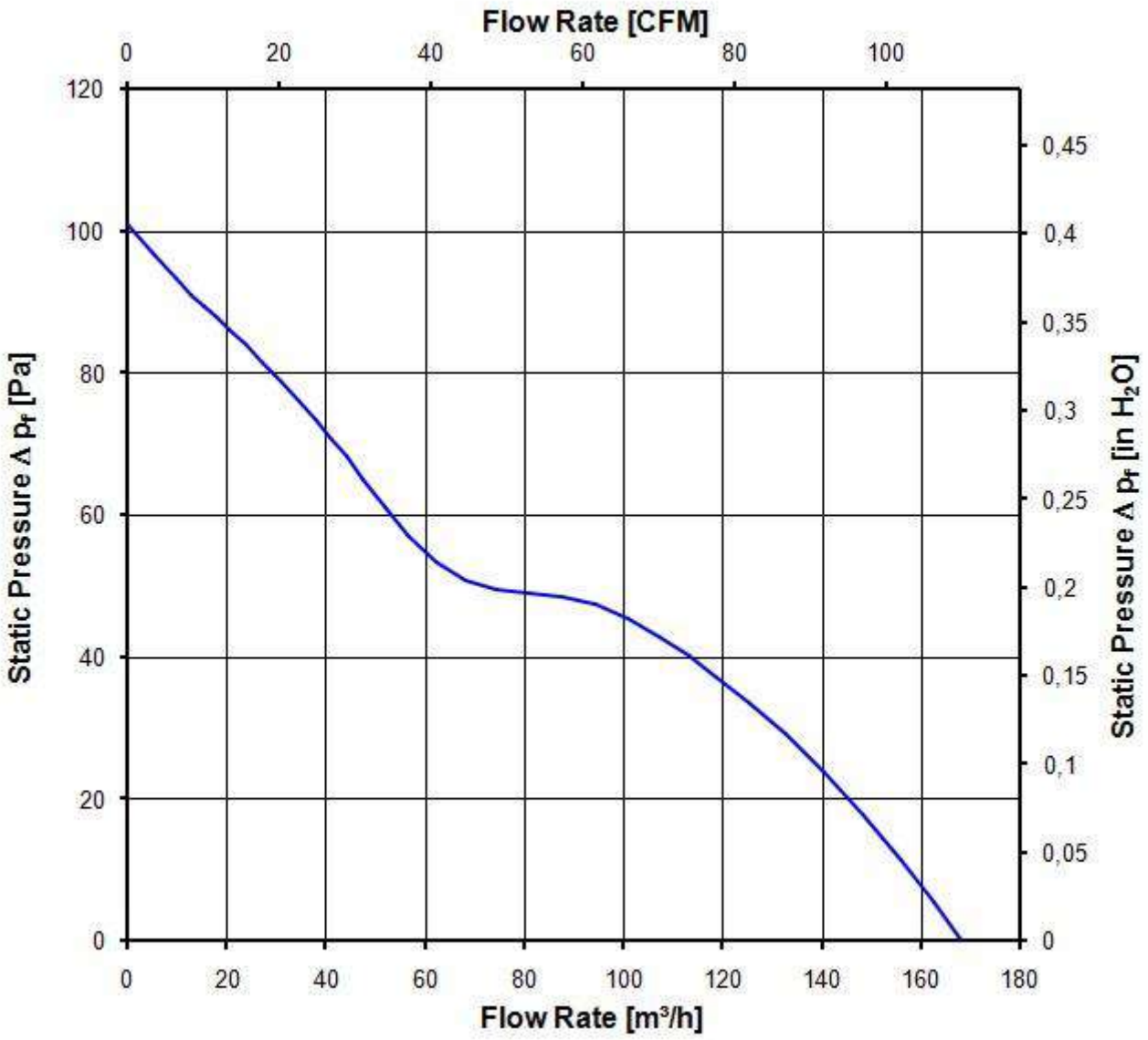
3.5 Aerodynamics

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:

3.200 1/min at free air flow

Max. free-air flow (Δp = 0 / V̇ = max.)	168,0 m3/h	
Max. static pressure (Δp = max. / V̇ =0)	100 Pa	



3.6 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:

3.200 1/min at free air flow

Optimal operating point	104,0 m3/h @ 40 Pa	
Sound power level at the optimal operating point	5,6 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.	-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	

4.2 Climatic Requirements*)

IP-protection type (certified)	IP 68 (for fan only, not for connector if applicable) **)	
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	
Salt fog requirements	None	

*) Permittet application area:
The product is for the use in partial sheltered rooms or open, roofed areas. Direct exposure to water is allowed provided that this does not prevent the normal operation. Saline ambient conditions must be avoided.

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

**) The specification of the IP protection refers to the conditions mentioned in certification of the fan. The above mentioned short description of the protection scope is not final. For detailed information of the respective protection scope and definitions, see certification as well as DIN EN 60529 (protection by housings) and ISO 20653 (for vehicles) with the letter K.

Short description of the IP-protection type:
Solid particle Protection: Dust tight.
Protection against deliberate contact: Protected against contact to hazardous parts with a wire.
Protection against water: The fan test according to IP68 (Based on IEC 60529), is conducted in non-operating mode. The fan is tested by a complete immersion in water for a period of 2h at a water-level of 1,2m. Electrical connections are not immersed since they are customer specific.

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. 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 / 1,2 mm	
Protection class	III	

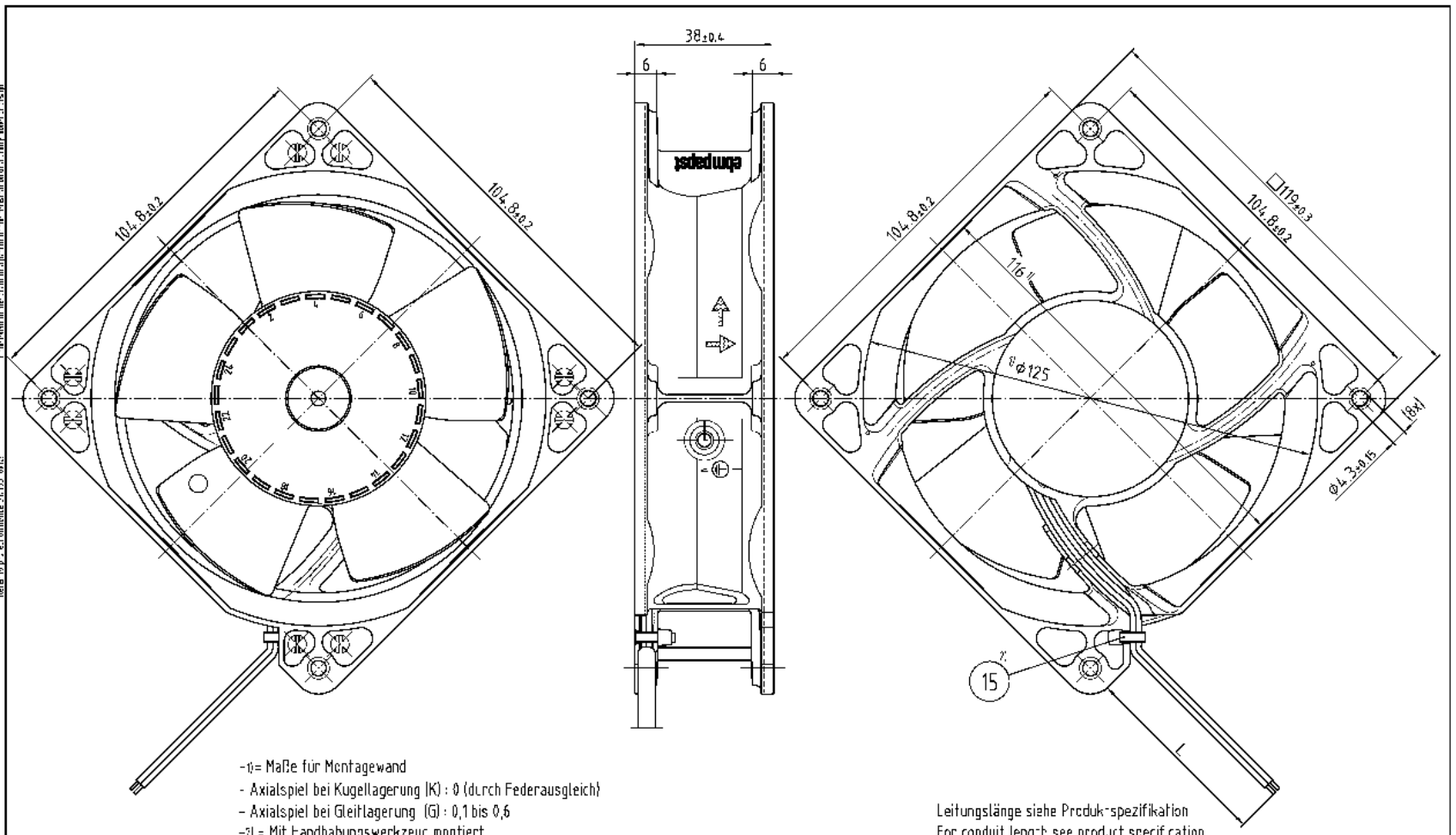
5.2 Approval Tests

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	No

6 Reliability

6.1 General

Inhalt dieser Unterlage, auch Kopien davon, sind geistiges Eigentum der ebm-papst Gruppe. Jede Weitergabe, Vervielfältigung oder Verwertung ohne unsere ausdrückliche Genehmigung ist verboten. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte vorbehalten.
Schutzvermerk nach DIN 34, beachten!



-1)= Maße für Montagewand
- Axialspiel bei Kugellagerung (K) : 0 (durch Federausgleich)
- Axialspiel bei Gleitlagerung (G) : 0,1 bis 0,6
-2)= Mit Handhabungswerkzeug montiert,
Kopf darf nach Montage nicht über Außenkontur des Lüftergehäuses stehen

-1)= Measures for prefab wal.
- Axial play with ball bearing (K) 0 (by spring compensation)
- Axial play with sleeve bearing (G): 0,1 to 0,6
-2)= With handling tool installed,
Head may not stand over outer contour of the fan housing after assembly

Leitungslänge siehe Produktspezifikation
For conduit length see product specification

			ebmpapst	Werkstoff/Material	Vol.Line/Vol.Line [mm³]
SAP-Status/Stufe	Kund.-Ver./Change-No.	Ers.f.CAD-Sperr-Vermerk	CAD Umrechnung/ CAD Conversion		Gewicht/Mass [g]
		Datum/Date	Name/Name		
Toleranzen/Tolerances:		Bearb./ Drawn		Benennung/Title	
Allgemeintoleranzen/Gen. tolerances		Gepr./ Checked		axial compact fan	
DIN ISO 2768-1 u. 2-mK		Freig./ Released			
ebmpapst				Zeichn.-Nr./ Drawing-No.	Ers.f./Orig./Replaces
ebm-papst St. Georgen GmbH & Co. KG				Dokumentart/Type of Document	Format/Size