

4114NH3U-339

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6.1 General 9

1 General

Fan type	Fan	
Rotational direction looking at rotor	clockwise	
Airflow direction	Air intake over struts	
Bearing system	Ball bearing	
Mounting position	any	

2 Mechanics

2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	38,0 mm	
Weight	0,380 kg	
Housing material	Metal	
Impeller material	Plastic	

2.2 Connections

Electrical connection	Wires - Plug	
Length of lead wire Tolerance		
Wire gauge (AWG)	22	
Insulation diameter	1,70 mm	
Contact + Connector	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.

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

Features	Condition	Symbol	Values		
Voltage range	$\Delta p = 0$	U	16,0 V		30,0 V
Nominal voltage	$\Delta p = 0$	U_N		24,0 V	
Power consumption Tolerance	$\Delta p = 0$ 0001	P	10,4 W +- 15,0 %	19,5 W +- 15,0 %	20,4 W +- 15,0 %
Current consumption Tolerance	$\Delta p = 0$ 0001	I	650 mA +- 15,0 %	810 mA +- 15,0 %	680 mA +- 15,0 %
Speed Tolerance	$\Delta p = 0$ 0001	n	4.700 1/min +- 10,0 %	6.000 1/min +- 10,0 %	6.000 1/min +- 10,0 %
Starting current consumption				3.300 mA	

Note:
No inrush current at Unom means:

The internal electrolytic capacitor 120uF/50V has no resistor or inrush current limitation, essentially the power supply and the type and length of the connecting cable is limiting the Inrush current.

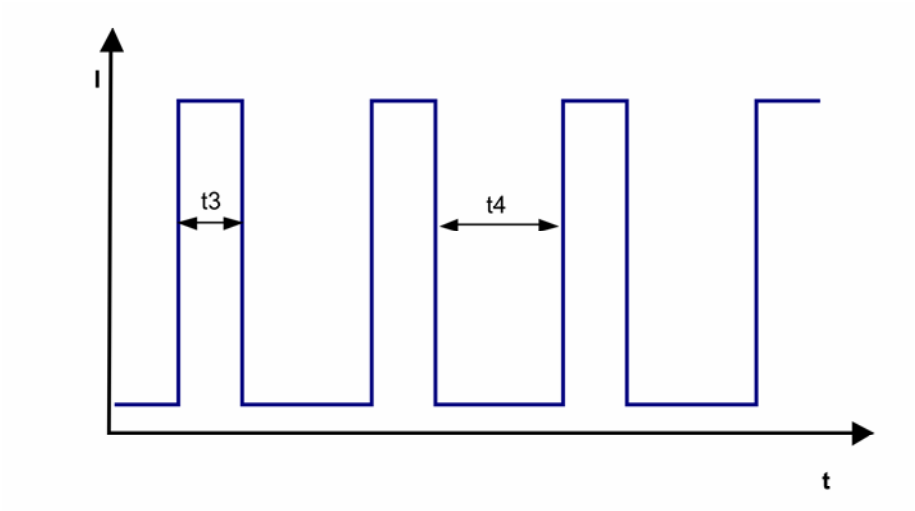
3.3 Operating Data - Electrical Interface -Output

Tacho type	None

Alarm type	None

3.4 Electrical Features

Electronic function	Speed-Controlled	
Reversed polarity protection Max. residual current at Un	Rectifying diode IF <= 10 mA	
Locked rotor protection	Auto restart	
Locked rotor current at Un	approx. 3.300 mA	
Clock signal t3/t4 at locked rotor	Typical: 1,0 s / 5,5 s	



Internal Fuse:
Littlefuse NANO2(R) FUSE; Very fast acting 451 Series; 3 A (Art.-Nr.: 451003)

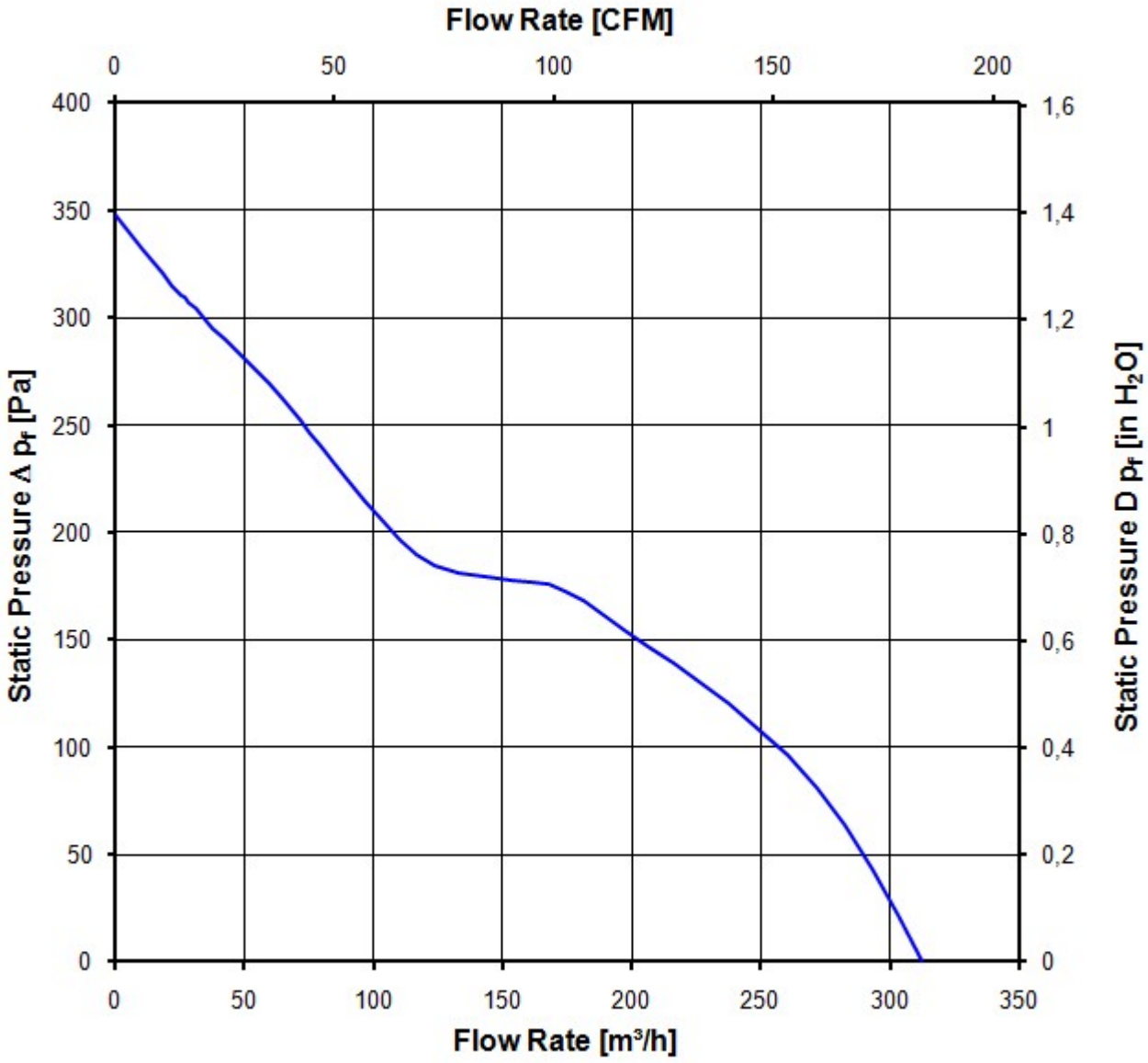
3.5 Aerodynamic

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.

a.) Operation condition:

6.000 1/min at free air flow

Max. free-air flow (Δp = 0 / V̇ = max.)	310,0 m3/h	
Max. static pressure (Δp = max. / V̇ =0)	350 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:

6.000 1/min at free air flow

Optimal operating point	240,0 m3/h @ 107 Pa	
Sound power level at the optimal operating point	7,1 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	64,0 dB(A)	

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	65 °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 **)	
Humidity requirements	humid heat, cyclic; according to DIN EN 60068-2-30, 6 cycle	
Radiation exposure	None	
Salt fog requirements	None	
Harmful gas requirements	None	

*) Permittet application area:
The product is for the use in sheltered rooms with limited controlled temperature. Occasionally condensed water is allowed. Direct exposure to water must be avoided. Saline ambient conditions must be avoided.Pollution degree 2 (according DIN EN 60664-1)
It occurs only non-conductive pollution. Occassionally, temporary conductivity caused by condensation occurs.
**) 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: Protected against the effects of continuous immersion in water.

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	
Air and leakage distances	1,0 mm / 1,2 mm	
Protection class	III	

5.2 Approval Tests

CE	Yes
UL	Yes / UL507, Electric Fans
VDE	Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment
CSA	Yes / C22.2 No. 113 Fans and Ventilators
CCC	No

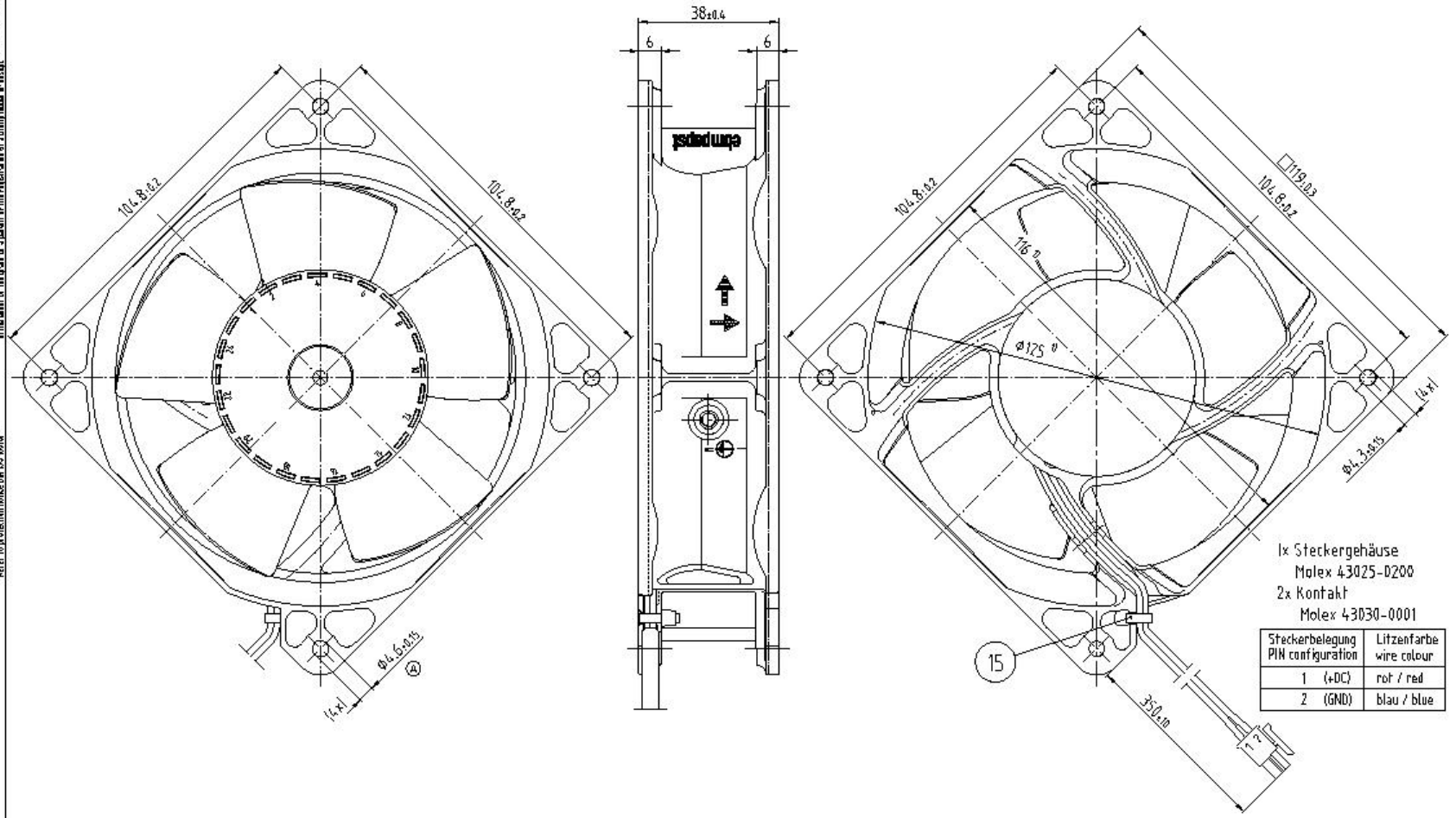
The approval tests are observed to:
U approval max.:30,0 V @ TU approval max.: 65,0 °C

6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	65.000 h	
Life expectancy L10 at TU max.	37.500 h	
Life expectancy L10 Delta (40 °C)	132.500 h	

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1x Steckergehäuse
Molex 43025-0200
2x Kontakt
Molex 43030-0001

Steckerbelegung PIN configuration	Litzenfarbe wire colour
1 (+DC)	rot / red
2 (GND)	blau / blue

1) Maße für Montagewand
dimensions for assembly wall

Axialspiel bei/axial clearance by
- Kugellagerung/ball bearing (KI: 0 (mit Federausgleich/with spring compensation)
- Gleitlagerung/sleeve bearing (G): 0,1 - 0,6
- Gleitlagerung/sleeve bearing (GF): 0 (mit Federausgleich/with spring compensation)

SAP-Status/Status	Kund.-Nr./Change-No.		ebmpapst	Werkstoff/Material:				Volumen/Volume [mm³]:	
		Art.CAD-System-Version	CAD-Umgebung/ CAD-Environment					Gewicht/Mass [g]:	
		Datum/Date	Name/Name						
		Bearb./ Drawn		Artikel/Title:					
		Gepr./ Checked							
Toleranzen/Tolerances:		Freig./ Released							
Allgemeintoleranzen/Gen. tolerances		ebmpapst		Zchg.-Nr./ Drawing-No.:				Ers.f.Zchg./ Replaces:	
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