Product Data Sheet 612 N/39HH-297

ebmpapst

The engineer's choice



GREEN TECH

612 N/39HH-297
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6.1 General 10

1 General

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

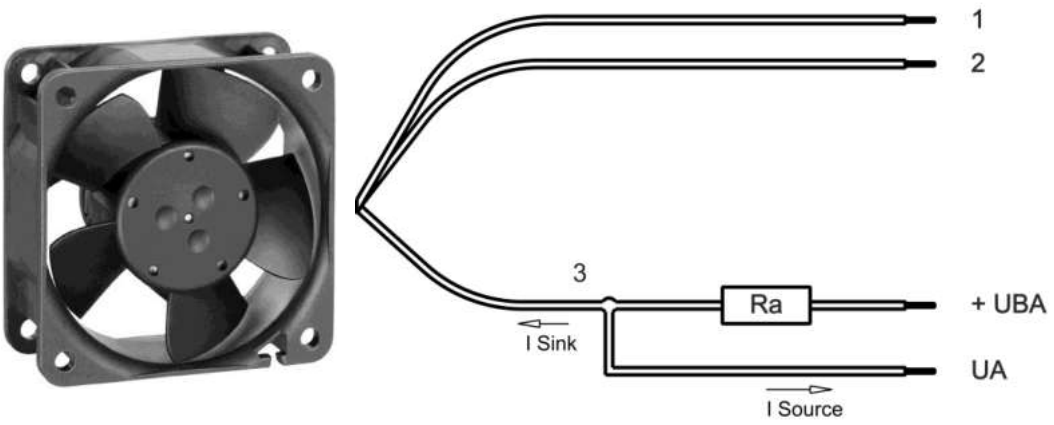
2 Mechanics

2.1 General

Width	60,0 mm	
Height	60,0 mm	
Depth	25,0 mm	
Mass	0,066 kg	
Housing material	Plastic	
Impeller material	Plastic	

2.2 Connections

Electrical connection	Wires - Plug	
Lead wire length Tolerance		
Wire size (AWG)	24	
Insulation diameter	1,55 mm	
Contact	See drawing	



Wire	Colour	Operation
1	red	+ UB
2	blue	- GND
3	white	Alarm

The auxilliaries shown on the schematic diagram (which are required for the intended use) are not part of our delivery.

3 Operating Data

3.1 Electrical Operating Data

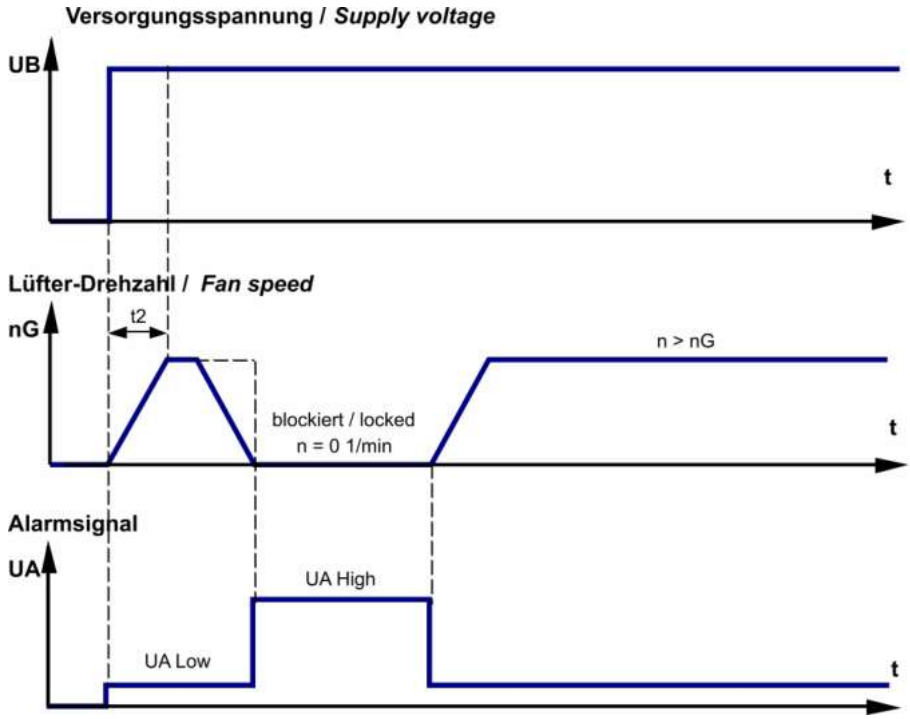
Measurement conditions: Normal air density = 1,2 kg/m3; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

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

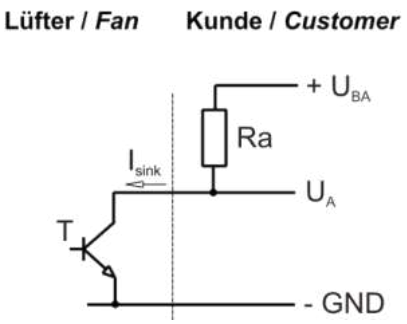
Features	Condition	Symbol	Values		
Voltage range		U	8,0 V		15,0 V
Nominal voltage		U_N		12,0 V	
Power consumption Tolerance	Δp = 0 0010	P	1,2 W +- 17,5 %	2,9 W +- 12,5 %	4,8 W +- 17,5 %
Current consumption Tolerance	Δp = 0 0010	I	145 mA +- 17,5 %	240 mA +- 12,5 %	320 mA +- 17,5 %
Speed Tolerance	Δp = 0 0010	n	4.950 1/min +- 10,0 %	6.800 1/min +- 7,5 %	8.300 1/min +- 10,0 %

3.2 Operating Data - Electrical Interface - Output

Alarm type	/39 (low = ok, open collector)



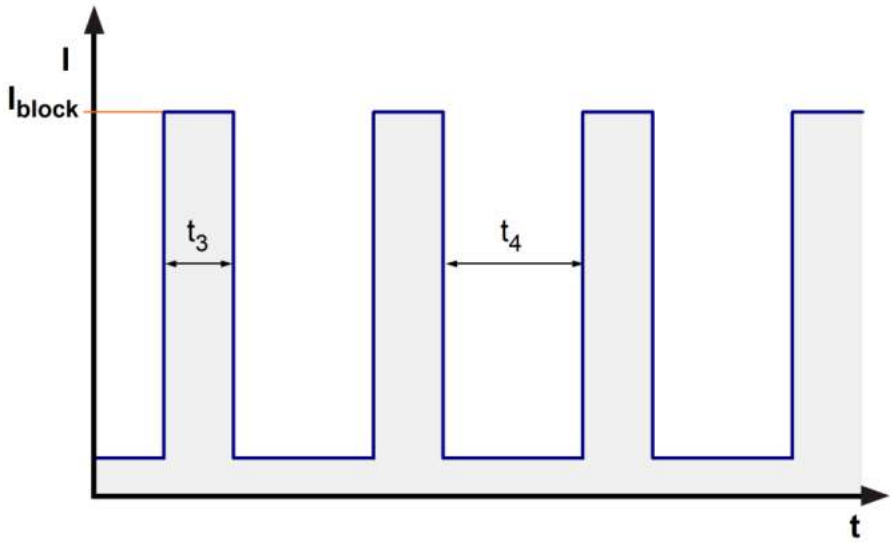
$$Ra = \frac{U_{BA} - U_{A\,low}}{I_{sink}}$$



Features	Note	Values
Alarm operating voltage (UBA)		<= 28 V
Alarm signal Low *)	I sink: 2 mA	<= 0,5 V
Alarm signal High *)	I source: 0 mA	28 V
Maximum sink current		<= 10 mA
Maximum source current		0 mA
External resistor	External resistor Ra from UBA to UA required. All voltage measured to GND.	
Alarm start-up delay time (t2)		<= 1 s
Alarm trip speed limit (nG)		0 1/min
Alarm at sense failure	No	
Alarm latch	No	
Alarm isolated from motor	No	

3.3 Electrical Features

Electronic function	None	
Reversed polarity protection Max. residual current at U_N	Rectifying diode I_F <= 500 uA	
Locked rotor protection	Auto restart	
Locked rotor current at U_N	I_{block} approx. 970 mA	
Clock signal at locked rotor	t_3 / t_4 Typical: 0,16 s / 1 s	



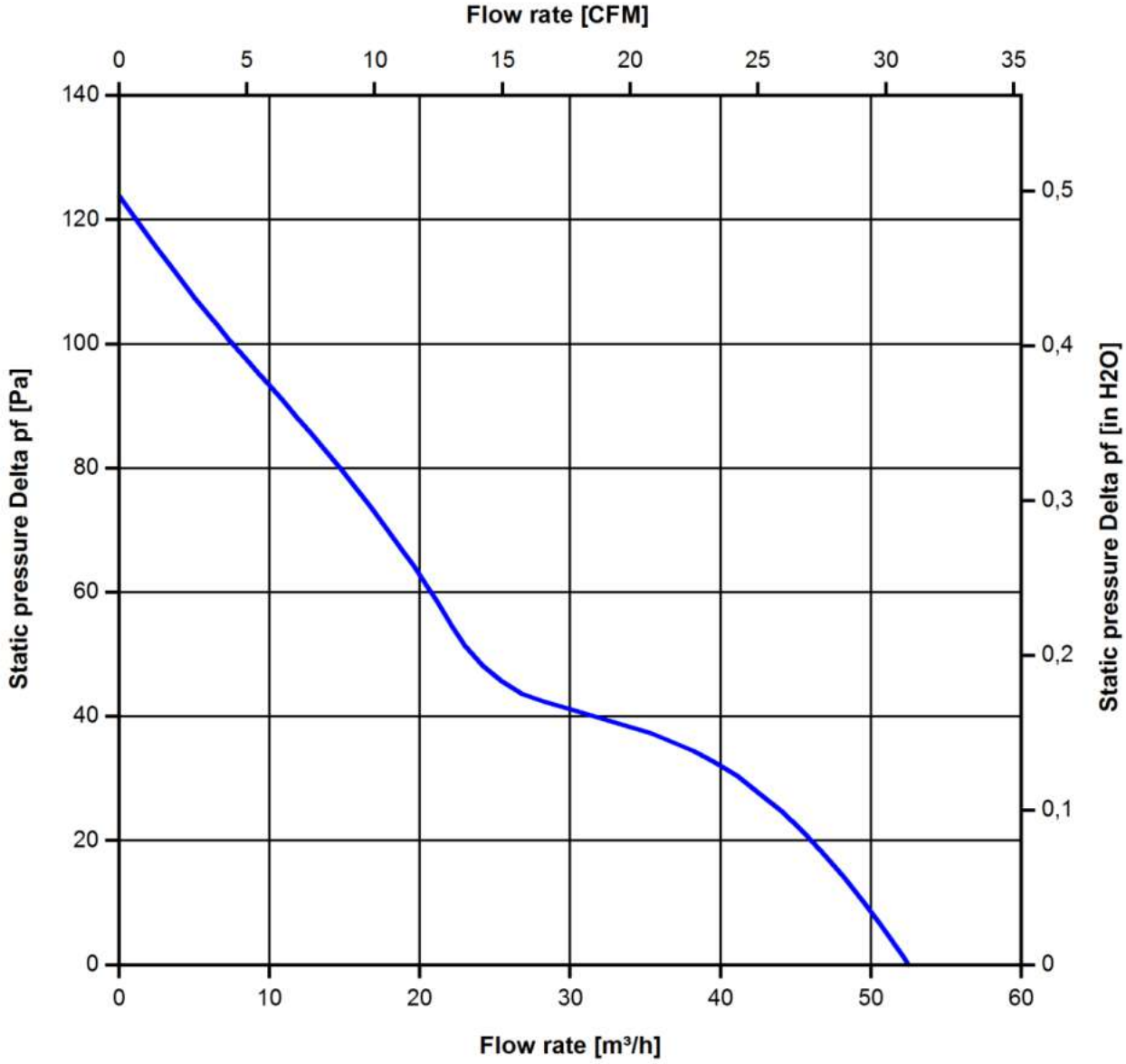
3.4 Aerodynamics

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:

6.800 1/min at free air flow

Max. free-air flow (Δp = 0 / $\dot{V}$ = max.)	52,0 m3/h	
Max. static pressure (Δp = max. / $\dot{V}$ =0)	124 Pa	



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 3.5

a.) Operation condition:

6.800 1/min at free air flow

Optimal operating point	39,0 m3/h @ 30 Pa	
Sound power level at the optimal operating point	5,6 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.	-20 °C	
Max. permitted ambient temperature TU max.	70 °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	

*) 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.

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.	Not applicable Not applicable	
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 / 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

Life expectancy L10 at TU = 40 °C	60.000 h	
Life expectancy L10 at TU = 60 °C	37.500 h	
Life expectancy L10 at TU max.	30.000 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	102.500 h	

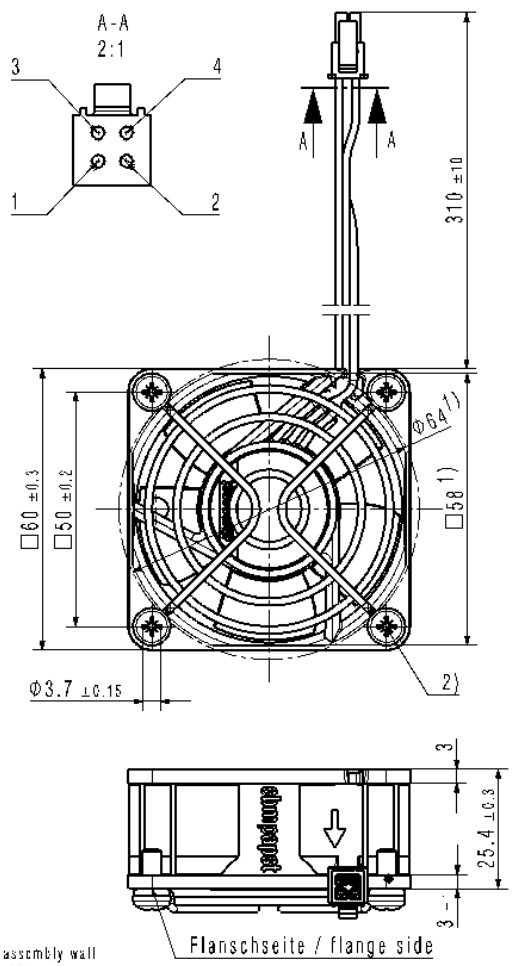
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Schutzvermerk nach DIN 34 beachten.
Note protection notice ISO 16016!

Steckerbelegung / Pin configuration	
Pin	Farbe / Color
Pin1	blau / blue
Pin2	rot / red
Pin3	weiß / white
Pin4	leer / empty

Steckergehäuse /
plug housing:
Molex 43025-0400

Kontakt / contact:
Molex 43030-0001



1) Maße für Montagewand / dimensions for assembly wall
2) Anzugsdrehmoment für Schrauben: 0,3-0,35Nm/
tightening torque for screws: 0.3-0,35Nm

Ä4-Status/State	Änd.-Nr./ Change No.	CATIA-System-Version/ CATIA-System-Version	CAD-Umgebung/ CAD-Environment	Werkstoff / Material:	Volumen / Volume (cm³):
					Gewicht / Mass (g):
		9232226237 GFR190-		Artikel / Title:	
		3D Referenzmodell ; 3D Reference model			
Tolerierung / Tolerances:		Datum	Name		
	Gezeichn. / Drawn				
Allgemeintoleranzen / Gen. Tolerances:	Gepr. / Checked			Zchg.-Nr.: Drawing No:	Ers.f.Zchg. / Replaces:
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