Product Data Sheet 4414F/37-562

ebmpapst

Die Wahl der Ingenieure



GREEN TECH

4414F/37-562

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6.1 General 9

1 General

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

2 Mechanics

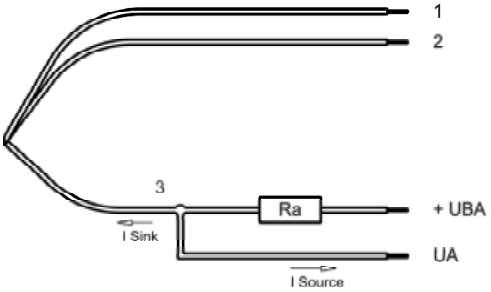
2.1 General

Width	119,0 mm	
Height	119,0 mm	
Depth	25,4 mm	
Mass	0,180 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges Screw size	wire outlet corner: 40 Ncm remaining corners: 10 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 +- 10,0 mm	
Wire size (AWG)	24	
Insulation diameter	1,55 mm	
Contact	See drawing	





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

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

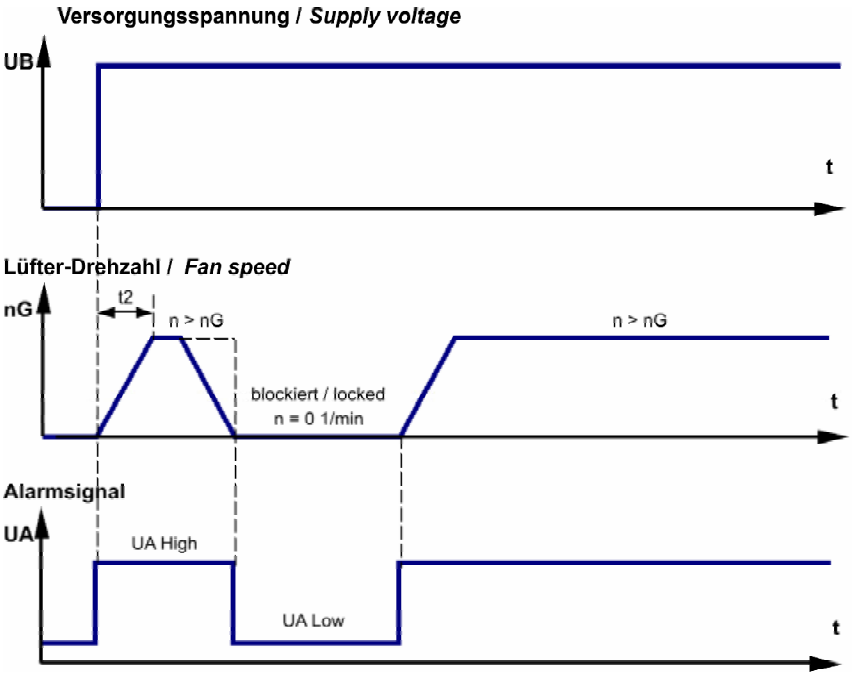
Features	Condition	Symbol	Values		
Voltage range	Δp = 0	U	12,0 V		26,4 V
Nominal voltage	Δp = 0	U_N		24,0 V	
Power consumption Tolerance	Δp = 0 0001	P	1,2 W +- 17,5 %	5,8 W +- 12,5 %	7,1 W +- 15,0 %
Current consumption Tolerance	Δp = 0 0001	I	100 mA +- 17,5 %	240 mA +- 12,5 %	270 mA +- 15,0 %
Speed Tolerance	Δp = 0 0001	n	1.700 1/min +- 12,5 %	2.900 1/min +- 7,5 %	3.150 1/min +- 10,0 %

Features	Condition	Symbol	Values		
Voltage range	Δp = 0	U	12,0 V		26,4 V
Nominal voltage	Δp = 0	U_N		24,0 V	
Power consumption Tolerance	Δp = 0 0010	P	1,2 W +- 17,5 %	5,8 W +- 12,5 %	7,1 W +- 15,0 %
Current consumption Tolerance	Δp = 0 0001	I	100 mA +- 17,5 %	240 mA +- 12,5 %	270 mA +- 15,0 %
Speed Tolerance	Δp = 0 0001	n	1.700 1/min +- 12,5 %	2.900 1/min +- 7,5 %	3.150 1/min +- 10,0 %

3.3 Operating Data - Electrical Interface - Output

Tacho type	None

Alarm type	/37 (high = ok, open collector inverse)

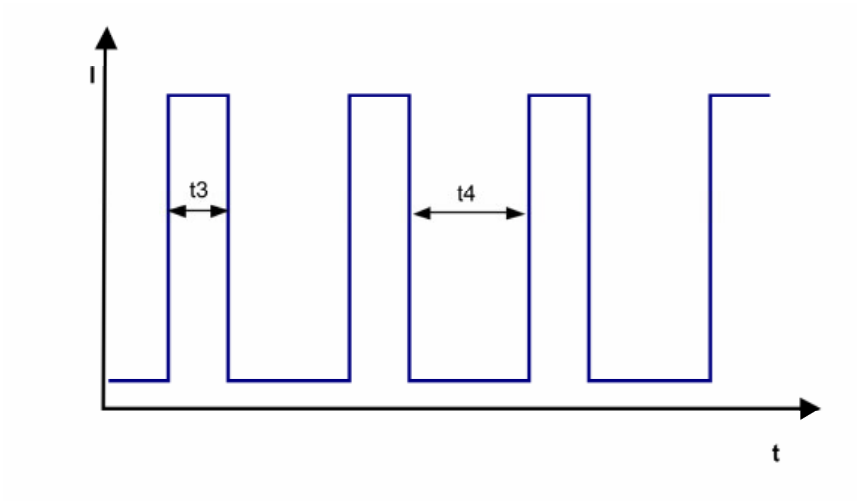


$$Ra = \frac{UBA - UA\ Low}{I\ Sink}$$

Features	Note	Values
Alarm operating voltage (UBA)		<= 28 V
Alarm signal Low *)	I sink: 10 mA	<= 0,3 V
Alarm signal High *)	I source:	28 V
Leakage current		15 uA
External resistor	External resistor Ra from UBA to UA required. All voltage measured to GND.	
Alarm start-up delay time (t2)		> 0,1 s
Alarm trip speed limit (nG)		45 1/min
Alarm at sense failure	No	
Alarm latch	No	
Alarm isolated from motor	No	

3.4 Electrical Features

Electronic function	None	
Reversed polarity protection Max. residual current at Un	Rectifying diode IF <= 30 uA	
Locked rotor protection	Auto restart	
Locked rotor current at Un	approx. 500 mA	
Clock signal t3/t4 at locked rotor	Typical: 0,1 s / 0,6 s	



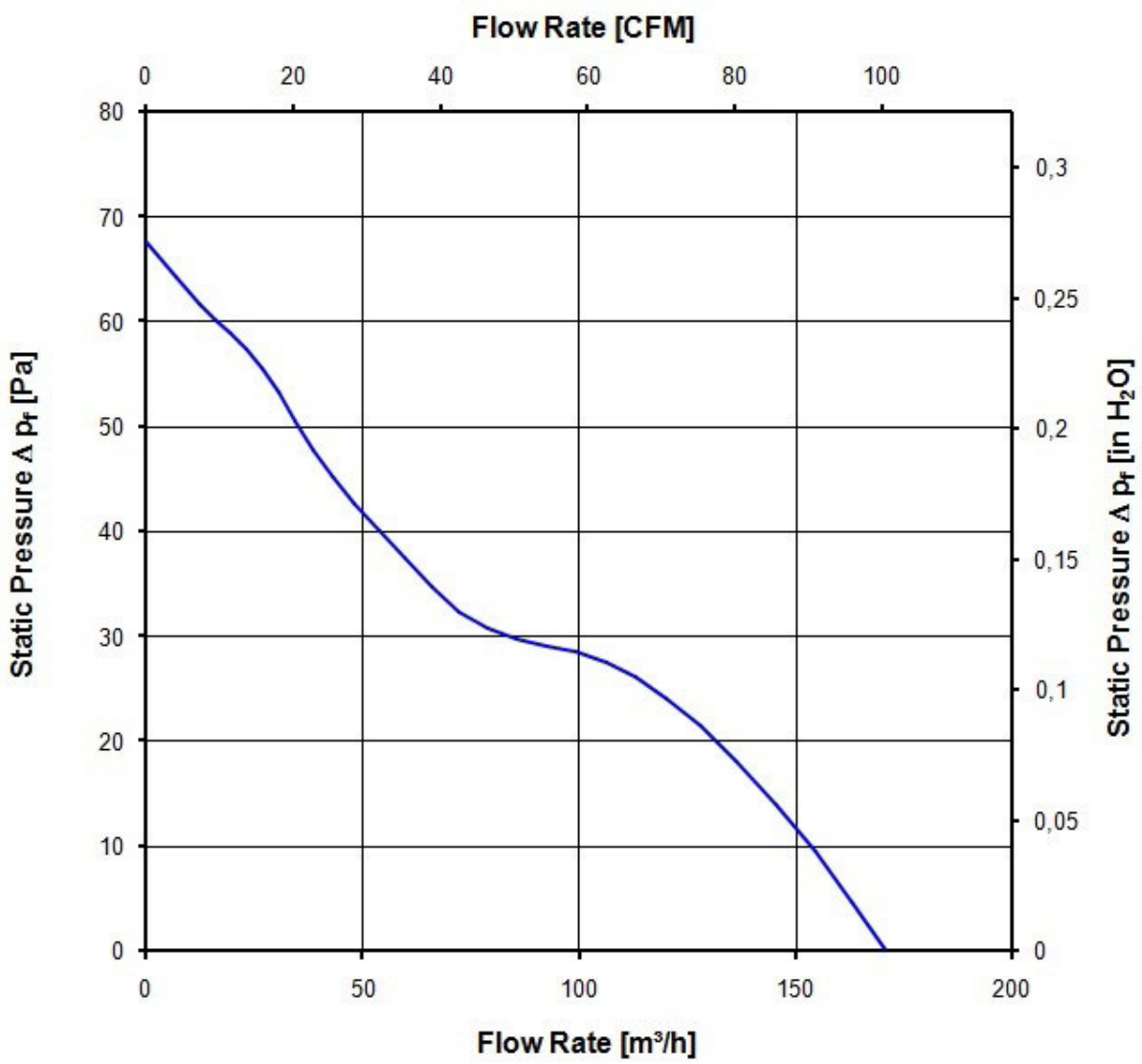
3.5 Aerodynamics

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:

2.900 1/min at free air flow

Max. free-air flow (Δp = 0 / $\dot{V}$ = max.)	168,0 m3/h	
Max. static pressure (Δp = max. / $\dot{V}$ =0)	67 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:

2.900 1/min at free air flow

Optimal operating point	124,0 m3/h @ 19 Pa	
Sound power level at the optimal operating point	5,4 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.	60 °C	
Min. permitted storage temperature TL min.	-40 °C	
Max. permitted storage temperature TL max.	80 °C	
Permitted ambient temperature TU1	-20 °C... 60 °C @ <= 25,2 V	
Permitted ambient temperature TU2	-20 °C... 55 °C @ <= 26,4 V	

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.	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 / 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

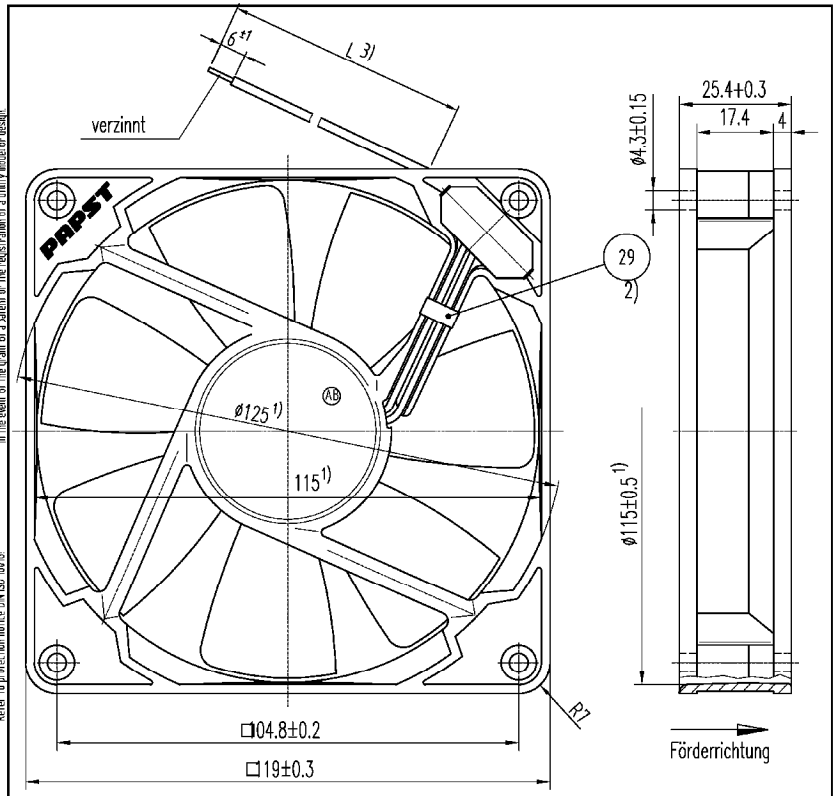
6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	60.000 h	
Life expectancy L10 at TU max.	37.500 h	
Life expectancy L10 Delta (40 °C)	120.000 h	

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Refer to protection marked DIN ISO 16016!



Axialspiel beiKugellagerung (K) : 0 (mit Federausgleich)
Axialspiel beiGleitlagerung (G) : 0.1 - 0.6
1) Maße für Montagewand
2) Pos. 29 nur wenn in Stückliste vorhanden
3) Anzahl und Länge der Litzen siehe Produktspezifikation

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