



The engineer's choice

ebmpapst

6224 NM

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1 General

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

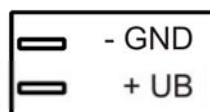
2 Mechanics

2.1 General

Depth	51,0 mm	
Diameter	172,0 mm	
Weight	0,780 kg	
Housing material	Metal	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges	wire outlet corner: 600 Ncm remaining corners: 600 Ncm	
Screw size	ISO 4762 - M4 degreased, without an additional brace and without washer	

2.2 Connections

Electrical connection	Plug	
Length of lead wire		
Tolerance		
Wire gauge (AWG)		
Insulation diameter		



3 Operating Data

3.1 Operating Data - Electrical Interface - Input

Control input	None
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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	12,0 V		32,0 V
Nominal voltage	$\Delta p = 0$	U_N		24,0 V	
Power consumption	$\Delta p = 0$	P	2,15 W	11,5 W	21,5 W
Tolerance	0001		+/- 20,0 %	+/- 20,0 %	+/- 20,0 %
Current consumption	$\Delta p = 0$	I	180 mA	480 mA	670 mA
Tolerance	0001		+/- 20,0 %	+/- 20,0 %	+/- 20,0 %
Speed	$\Delta p = 0$	n	1.400 1/min	2.850 1/min	3.800 1/min
Tolerance	0001		+/- 10,0 %	+/- 12,5 %	+/- 10,0 %
Starting current consumption				2.100 mA	

Note:

No inrush current at U_{nom} 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.

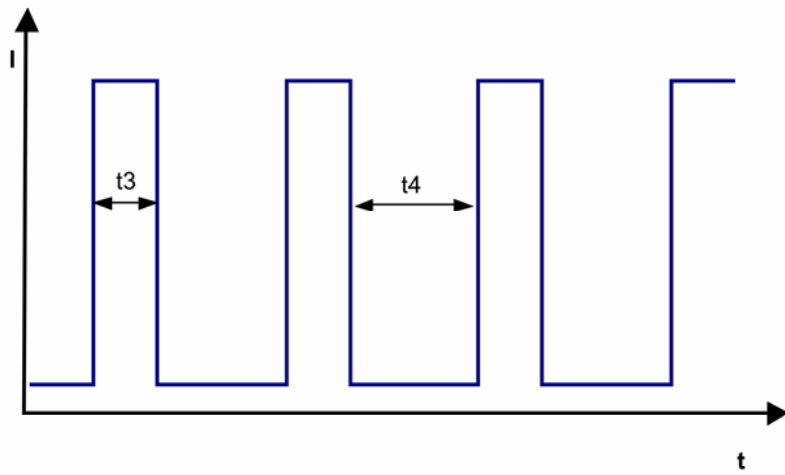
3.3 Operating Data - Electrical Interface -Output

Tacho type	None
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Alarm type	None
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3.4 Electrical Features

Electronic function	None	
Reversed polarity protection	Rectifying diode	
Max. residual current at U_N	IF < 10 mA	
Locked rotor protection	Auto restart	
Locked rotor current at U_N	approx. 2.100 mA	
Clock signal t3/t4 at locked rotor	Typical: 1,4 s / 5,3 s	



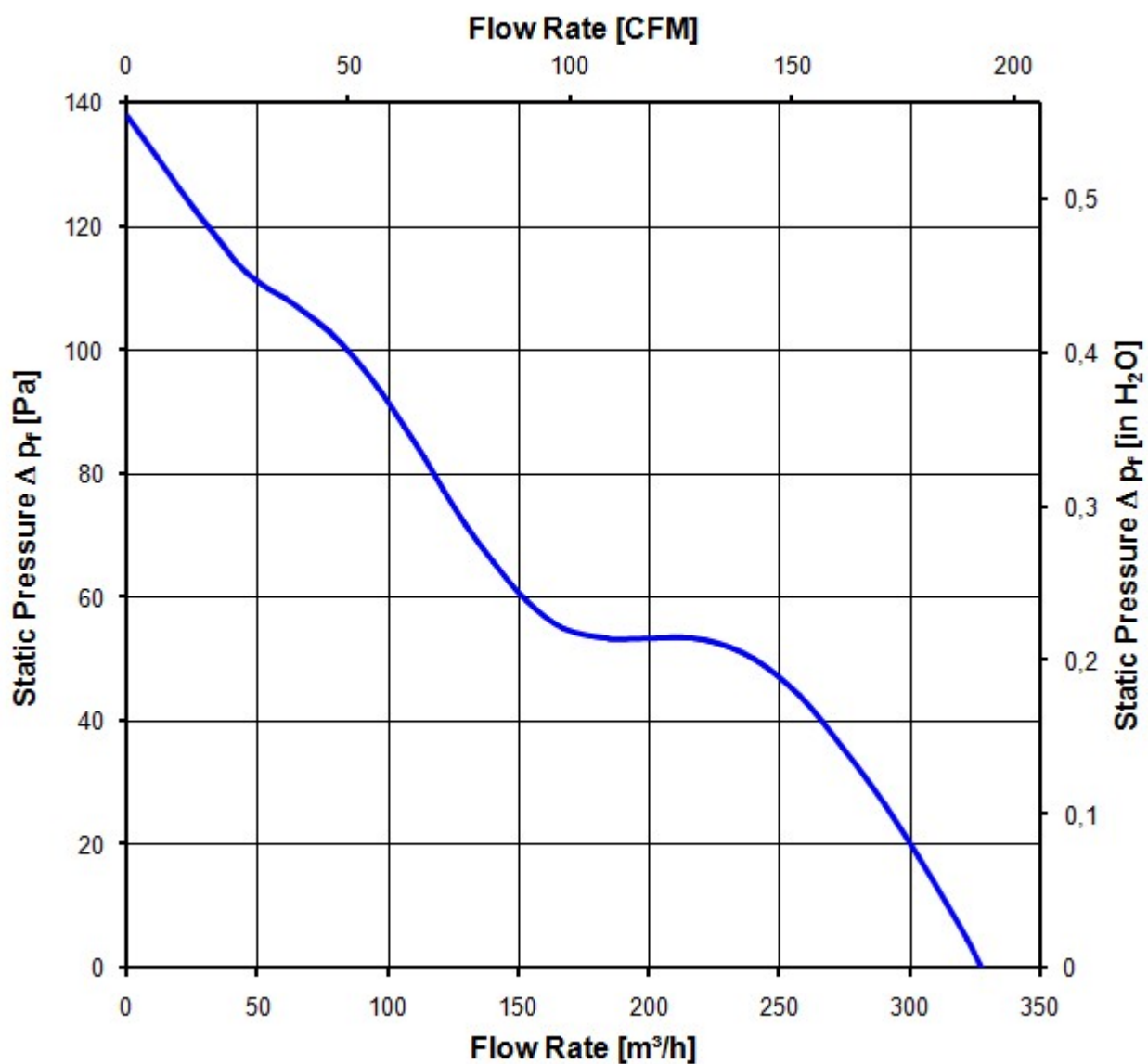
3.5 Aerodynamic

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:

2.850 1/min at free air flow

Max. free-air flow ($\Delta p = 0$ / $\dot{V} = \text{max.}$)	330,0 m ³ /h	
Max. static pressure ($\Delta p = \text{max.}$ / $\dot{V} = 0$)	138 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 $L_p(A) < 5 \text{ dB(A)}$
 For further measurement conditions see section 3.5

a.) Operation condition:

2.850 1/min at free air flow		
Optimal operating point	230,0 m ³ /h @ 54 Pa	
Sound power level at the optimal operating point	5,7 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	50,0 dB(A)	

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	72 °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	
Radiation exposure	None	
Dust requirements	None	
Salt fog requirements	None	
Harmful gas 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	
Air and leakage distances	1,0 mm / 1,2 mm	
Protection class	III	

5.2 Approval Tests

CE	Yes
UL	Yes / UL audited by CSA according to 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

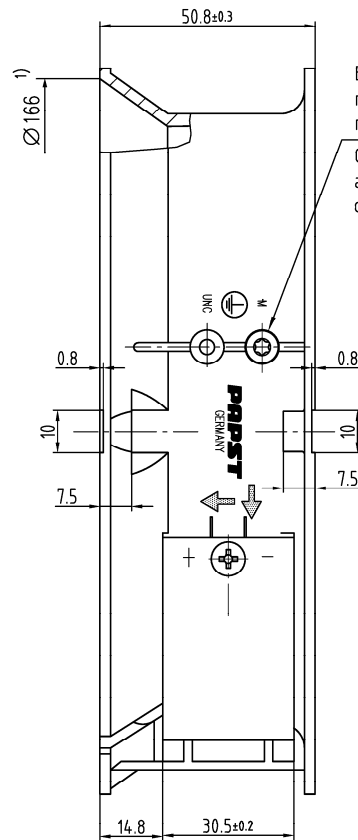
The approval tests are observed to:

Maximal permitted operating voltage (see section 3.1) and max. permitted ambient temperature TU max.

6 Reliability

6.1 General

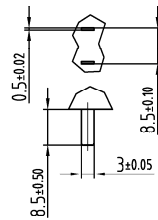
Life expectancy L10 at TU = 40 °C	80.000 h	
Life expectancy L10 at TU max.	37.500 h	
Life expectancy L10 Delta (40 °C)	157.500 h	



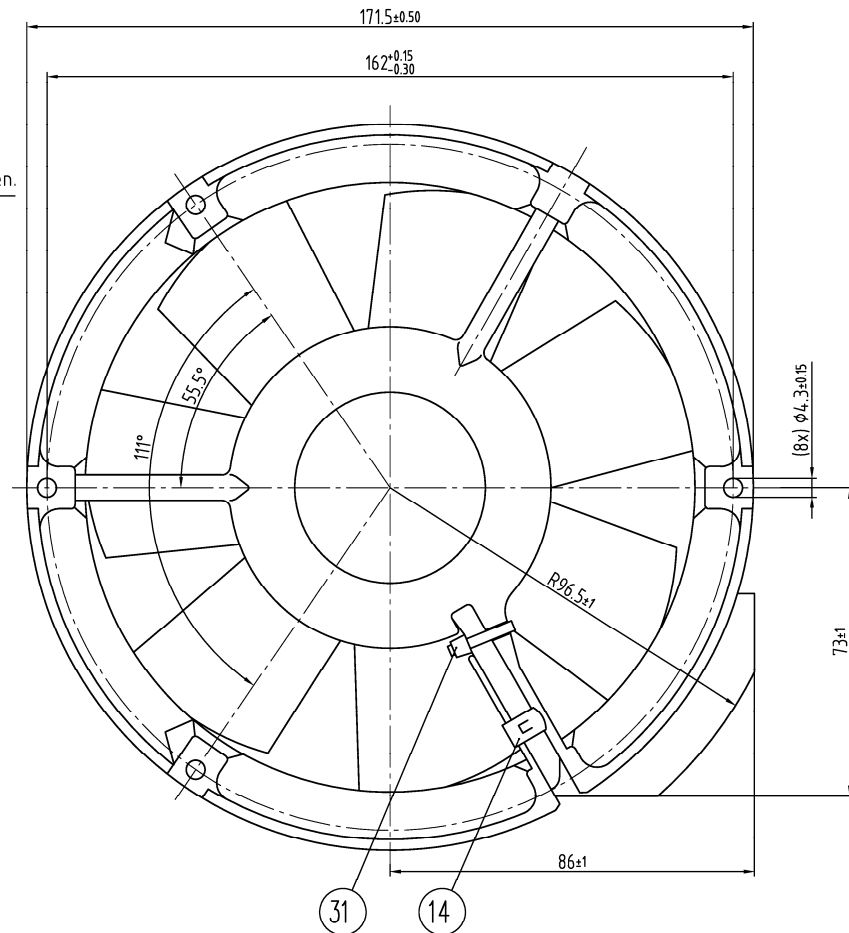
Ⓜ
Erdungsschraube Duo-Taptime
nach DIN 7500, CM 4x8, Torx
nur, wenn in Unterstückliste enthalten.

Grounding screw Duo-Taptime
according to DIN 7500, CM 4x8, Torx
only, if contained in sub-bill of material

Maße für Steckeranschluss
dimensions for plug connector



- Axialspiel: mit Feder spielfrei verspannt
- 1) Maße für Montagewand
- without axial clearance by a pre-loaded spring
- 1) dimensions for assembly wall



		ebmpapst		Werkstoff/Material:		Volumen/Volume (mm³):	
SAP-Status/State	Änd.-Nr./Change-No.	AutoCAD-System-Version	CAD-Umgebung/ CAD-Environment			Gewicht/Mass [g]:	
		Datum/Date	Name/Name	Artikel/Title			
		Bearb. / Drawn					
Tolerierung/Tolerances		Gepr. / Checked					
Allgemeintoleranzen/Gen. Tolerances		Freig. / Released					
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