

Product Data Sheet ACi 4420 MLR

ebmpapst

The engineer's choice



ACi 4420 MLR

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1 General

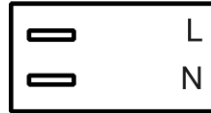
Fan type	Fan
Rotating direction looking at rotor	Clockwise
Airflow direction	Air outlet over struts
Bearing system	Ball bearing
Mounting position - shaft	Any

2 Mechanics**2.1 General**

Width	120 mm	
Height	120 mm	
Depth	38,0 mm	
Diameter	0,0 mm	
Mass	0,275 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges	Wire outlet corner: 50 Ncm Remaining corners: 80 Ncm	
Screw size	ISO 4762 - M4 degreased, without an additional brace and without washer	
Rotor protrusion max.	0,6 mm	

2.2 Connections

Electrical connection	Plug	
Lead wire length	See drawing	
Tolerance		
Tube length	See drawing	
Tolerance		
Wire size (AWG)		
Insulation diameter		
Plug	See drawing	
Contact	See drawing	



3 Operating Data

3.1 Electrical Interface - Input

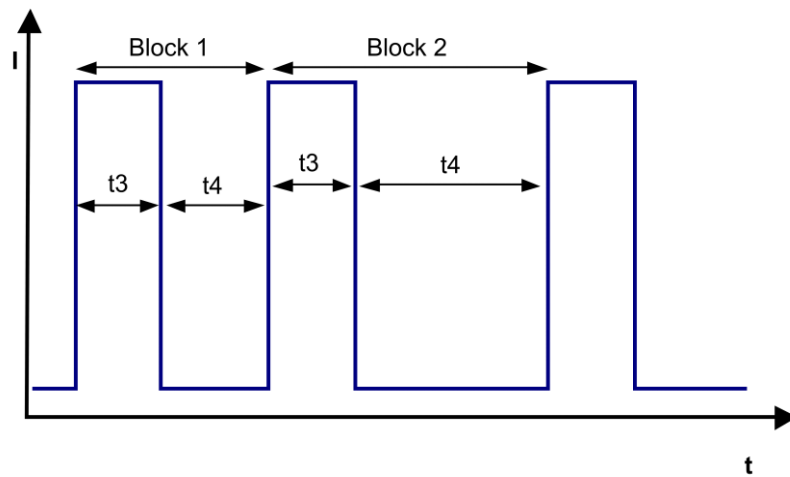
External voltage supply for input and output signals must be SELV conform.

3.2 Electrical Operating Data

Features	Condition	Symbol	Values		
Voltage range Tolerance		U			
Nominal voltage		U_N	230 V	230 V	
Frequency		f	50 Hz / 60 Hz		
Power consumption Tolerance	$\Delta p = 0$	P	1,7 W +/- 20 %		
Current consumption Tolerance	$\Delta p = 0$	I_{RMS}	14 mA +/- 20 %	14 mA +/- 20 %	
Speed Tolerance	$\Delta p = 0$	n	1.850 1/min +/- 10 %		

3.3 Electrical Features

Electronic function	Speed-Controlled	
Locked rotor protection	Auto restart	
Clock signal at locked rotor	typical: 0,25 s / 10,0 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:

1.850 1/min at free air flow

Frequency: 50 Hz

Nominal voltage: 230 V

Max. free-air flow ($\Delta p = 0 / \dot{v} = \text{max.}$)	100,0 m ³ /h
Max. static pressure ($\Delta p = \text{max.} / \dot{v} = 0$)	48 Pa

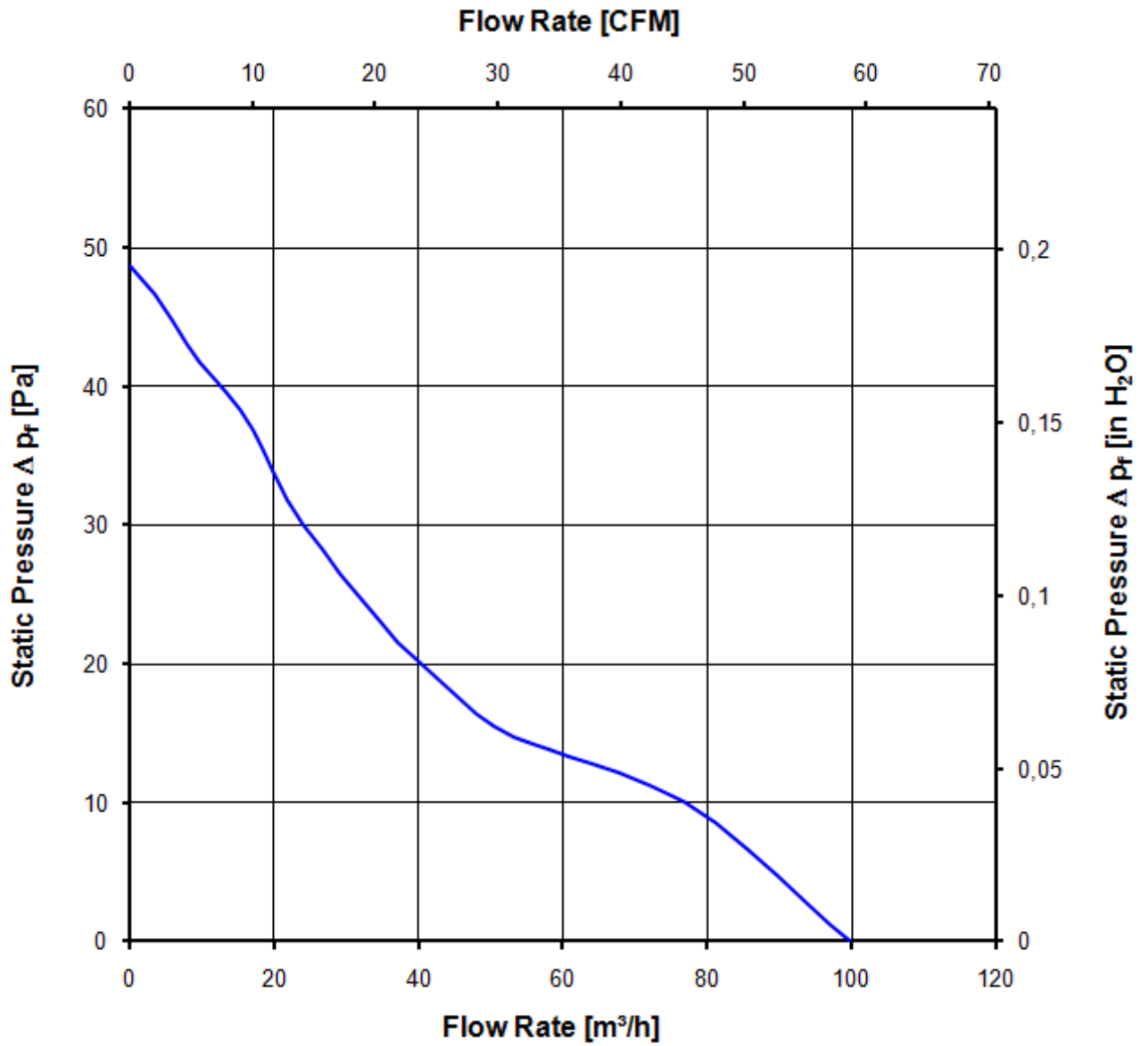
b) Operation condition:

1.850 1/min at free air flow

Frequency: 60 Hz

Nominal voltage: 230 V

Max. free-air flow ($\Delta p = 0 / \dot{v} = \text{max.}$)	
Max. static pressure ($\Delta p = \text{max.} / \dot{v} = 0$)	



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 $L_p(A) < 5 \text{ dB}(A)$
 For further measurement conditions see section 3.4

a) Operation condition: 1.850 1/min at free air flow Frequency: 50 Hz Nominal voltage: 230 V

Optimal operating point	84,0 m3/h @ 7 Pa	
Sound power level at the optimal operating point	4,1 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	25,0 dB(A)	

b) Operation condition: 1.850 1/min at free air flow Frequency: 60 Hz Nominal voltage: 230 V

Optimal operating point		
Sound power level at the optimal operating point		
Sound pressure level at free air flow, measured in rubber bands		

4 Environment

4.1 General

Min. permitted ambient temperature TU min.	-40 °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

Humidity requirements	humid heat, cyclic; according to DIN EN 60068-2-30, 6 cycle	
Water exposure	None	
Dust requirements	Dust check; according to DIN EN 60068-2-68, 6g/m2d, 1 day	
Salt fog requirements	None	

Permitted 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.

5 Safety

5.1 Electrical Safety

A verification of thermal conditions (normal and abnormal operation) as well as the protection against electric shock, ingress of solid foreign objects and water has to be done in conjunction with the appliance.

Test voltage HV type test	3000 V
Unit test voltage	VAC
Time type test HV	1 s
Insulation resistance	RI > 10 MOhm
Protection class	built-in fan

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	Yes / GB 12350 Safety Requirements for small Power Motors

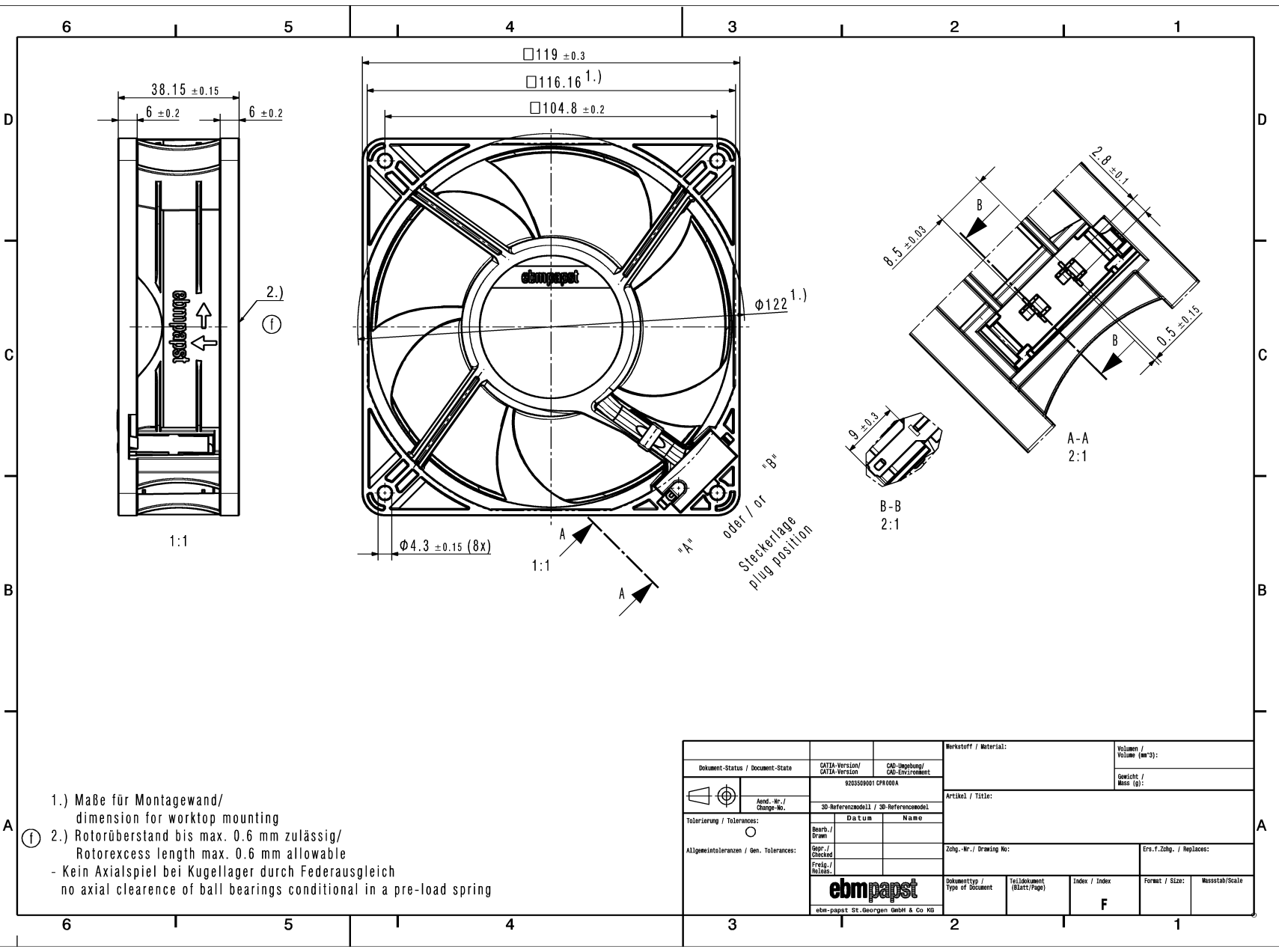
6 Reliability

6.1 General

Life expectancy L10 at TU = 40 °C	65.000 h	
Life expectancy L10 at TU max.	30.000 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	110.000 h	

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Schutzwurzel nach DIN ISO 9018 beachten!
 Refer to protection notices DIN ISO 9018!



- 1.) Maße für Montagewand/
 dimension for worktop mounting
 2.) Rotorüberstand bis max. 0.6 mm zulässig/
 Rotorexcess length max. 0.6 mm allowable
 - Kein Axialspiel bei Kugellager durch Federausgleich
 no axial clearance of ball bearings conditional in a pre-load spring

Dokument-Status / Document-Status		CATIA-Version/ CATIA-Version	CAD-Umgebung/ CAD-Environment	Werkstoff / Material:		Volumen / Volume (cm ³):	
920350001 CP9000A		3D-Referenzmodell / 3D-Reference Model		Artikel / Title:		Gewicht / Mass (g):	
Tolerierung / Tolerances:		Datum	Name	Zchg.-Nr. / Drawing No:		Ers.-f.Zchg. / Replaces:	
Allgemeintoleranzen / Gen. Tolerances:		Bearb./ Exec.		Dokumenttyp / Type of Document		Teildokument (Blatt/Page)	Index / Index
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