



The engineer's choice

**ebmpapst**

ACi 4420 HHU

INDEX

**1 General ..... 3**

**2 Mechanics ..... 3**

    2.1 General ..... 3

    2.2 Connections ..... 4

**3 Operating Data ..... 5**

    3.1 Operating Data - Electrical Interface - Input ..... 5

    3.2 Electrical Operating Data ..... 5

    3.3 Operating Data - Electrical Interface -Output ..... 5

    3.4 Electrical Features ..... 6

    3.5 Aerodynamic ..... 6

    3.6 Sound Data ..... 8

**4 Environment ..... 8**

    4.1 General ..... 8

    4.2 Climatic requirements\*) ..... 8

**5 Safety ..... 9**

    5.1 Electrical Safety ..... 9

    5.2 Approval Tests ..... 9

**6 Reliability ..... 9**

    6.1 General ..... 9

**1 General**

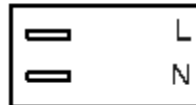
Fan type	Fan
Rotational direction looking at rotor	clockwise
Airflow direction	Air outlet over struts
Bearing system	Ball bearing
Mounting position	any

**2 Mechanics****2.1 General**

Width	120,0 mm	
Height	120,0 mm	
Depth	38,0 mm	
Diameter	0,0 mm	
Weight	0,275 kg	
Housing material	Plastic	
Impeller material	Plastic	

## 2.2 Connections

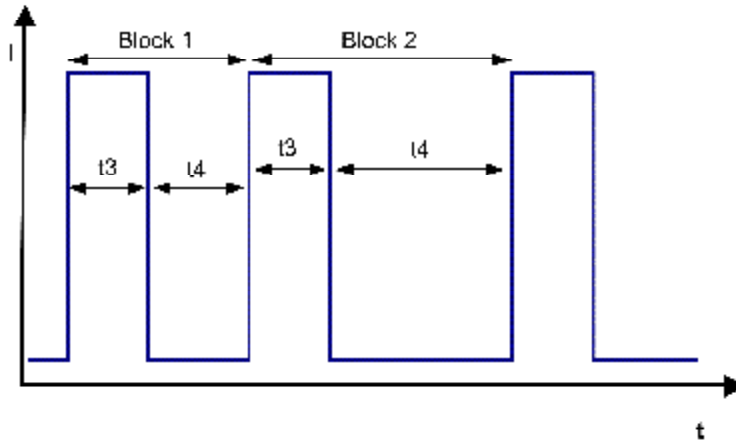
Electrical connection	Plug	
Length of lead wire	see drawing	
Tolerance		
Length of tube	see drawing	
Tolerance		
Wire gauge (AWG)		
Insulation diameter		
Plug	see drawing	
Contact	see drawing	





### 3.4 Electrical Features

Electronic function	Speed-Controlled	
Locked rotor protection	Auto restart	
Clock signal t3/t4 at locked rotor	Typical: 0,25 s / 10,0 s	



### 3.5 Aerodynamic

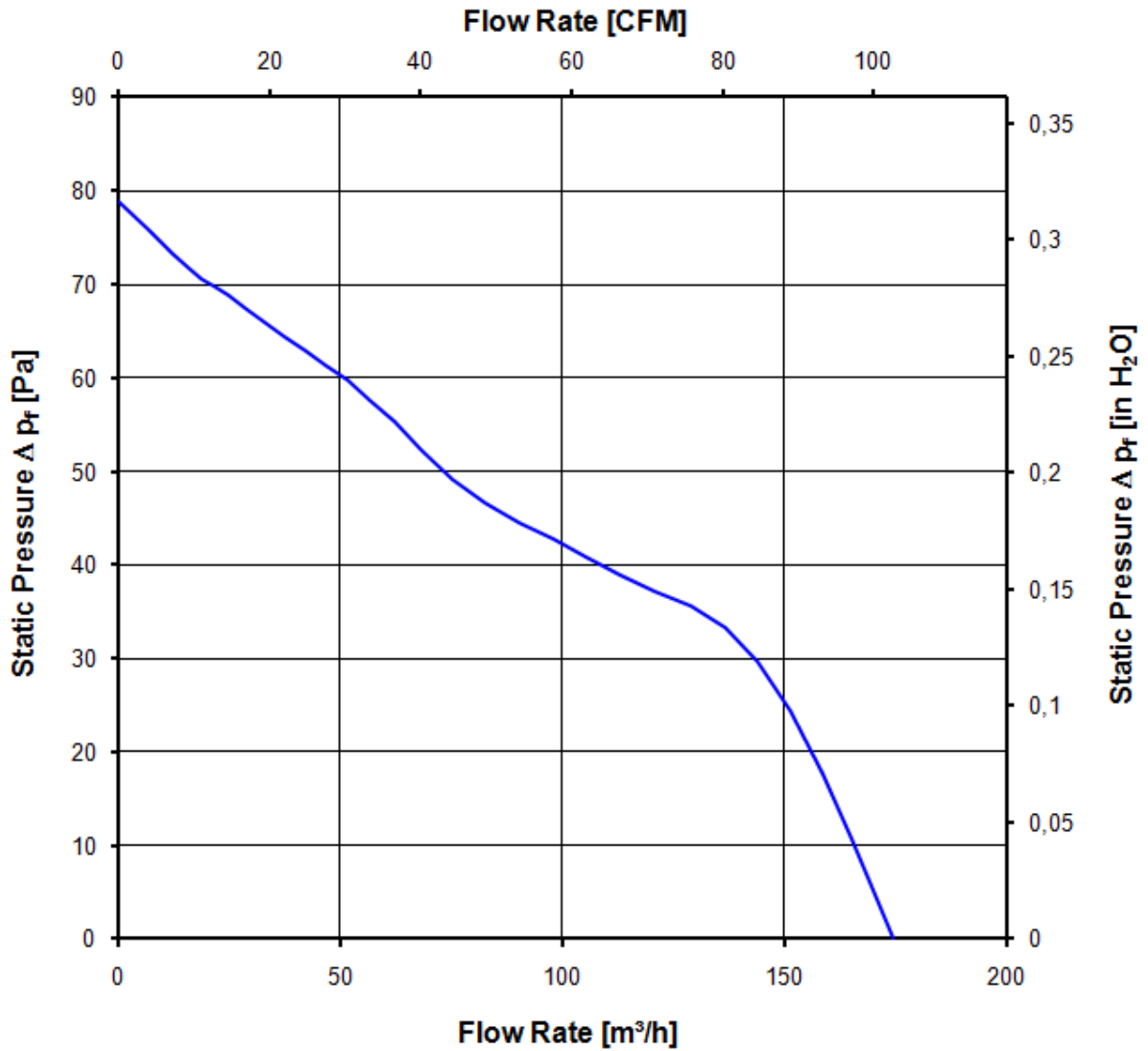
Measurement conditions: Measured with a double chamber intake rig acc. to DIN EN ISO 5801.  
 Normal air density = 1,2 kg/m<sup>3</sup>; Temperature 23°C +/- 3°C;  
 In the intake and outlet area should not be any solid obstruction within 0,5 m.

a) Operation condition:  
 3.300 1/min at free air flow                      Frequency: 50 Hz                      Nominal voltage: 230 V

Max. free-air flow ( $\Delta p = 0 / v = \text{max.}$ )	175,0 m <sup>3</sup> /h
Max. static pressure ( $\Delta p = \text{max.} / v = 0$ )	78 Pa

b) Operation condition:  
 at free air flow                      Frequency:                      Nominal voltage:

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



### 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 3.4

a) Operation condition: 3.300 1/min at free air flow Frequency: 50 Hz Nominal voltage: 230 V

Optimal operating point	142,0 m <sup>3</sup> /h @ 27 Pa	
Sound power level at the optimal operating point	5,5 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	43,0 dB(A)	

b) Operation condition: at free air flow Frequency: Nominal voltage:

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.	-20 °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 temperature, cyclic; according to DIN EN 60068-2-38, 10 cycle and condensation water check; according to DIN EN ISO 6270-2, 14 days	
Water exposure	Splash water check IPX4; according to DIN EN 60529 VDE 0470, not certified	
Radiation exposure	Solar radiation; according to DIN EN 60068-2-5	
Dust requirements	Dust check IP5X; according to DIN EN 60529 VDE 0470, not certified	
Salt fog requirements	salt fog, cyclic, in operation; according to DIN EN 60068-2-52, 3 cycle	
Harmful gas requirements	Mixed gas corrosion test; according to DIN EN 60068-2-60	

\*) Permitted application area:



The product is for the use in open and unsheltered areas. Direct exposure to water as well as saline ambient conditions are allowed provided that this does not prevent the normal operation.

Pollution degree 3 (according DIN EN 60664-1)

It occurs conductive pollution or dry non-conductive pollution which becomes conductive due to condensation.

## 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	II

### 5.2 Approval Tests

CE	Yes
UL	Yes
VDE	Yes
CSA	Yes
CCC	Yes

The approval tests are observed to:

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

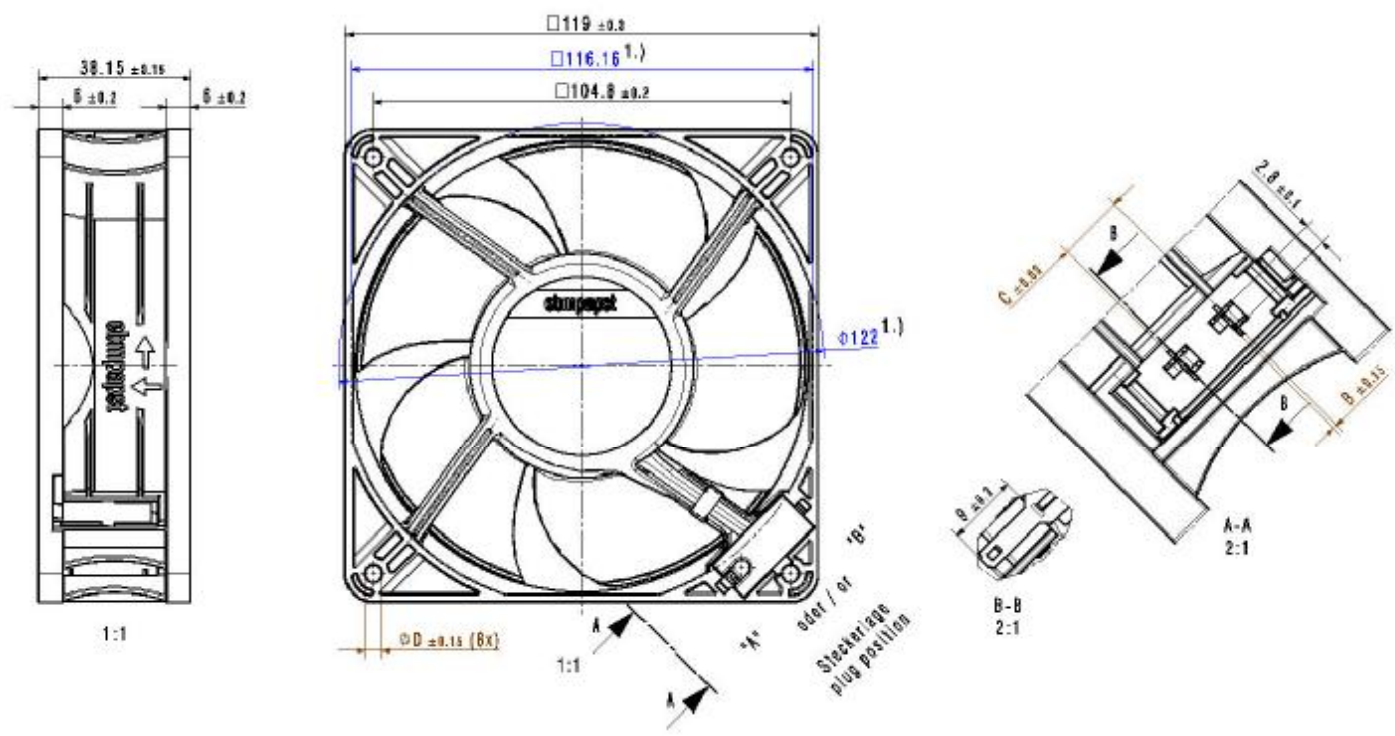
## 6 Reliability

### 6.1 General

Life expectancy L10 at TU = 40 °C	65.000 h	
Life expectancy L10 at TU max.	30.000 h	
Life expectancy L10 Delta (40 °C)	130.000 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	110.000 h	

Copies of this document, and parts II, values and the use of manufacturers of the standard bearing, are  
 not allowed without written permission of ebmpapst. The use of this document for other purposes is  
 not permitted. The use of this document for the reproduction of a similar work is prohibited.

ebmpapst ist ein Markenname der ebm-papst Group.  
 Alle Rechte vorbehalten. © 2018 ebm-papst Group.



1.) Maße für Montagewand  
 1.) dimension for worktop mounting  
 - Kein Axialspiel bei Kugellager durch Federausgleich  
 no axial clearance of ball bearings conditional in a pre-load spring

ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>	
ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>	
ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>	
ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>	
ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>		ebmpapst <small>ebm-papst Group</small>	