

Product Data Sheet ACi 4420 HHR

ebmpapst

Die Wahl der Ingenieure



ACi 4420 HHR

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 | Aerodynamics | 7 |
| 3.6 | Sound Data | 8 |
| 4 | Environment | 8 |
| 4.1 | General | 8 |
| 4.2 | Climatic Requirements*) | 8 |
| 5 | Safety | 8 |
| 5.1 | Electrical Safety | 8 |
| 5.2 | Approval Tests | 8 |
| 6 | Reliability | 9 |
| 6.1 | General | 9 |

1 General

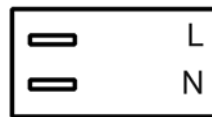
| | |
|-------------------------------------|------------------------|
| Fan type | Fan |
| Rotating direction looking at rotor | Clockwise |
| Airflow direction | Air outlet over struts |
| Bearing system | Ball bearing |
| Mounting position | Any |

2 Mechanics**2.1 General**

| | | |
|---|---|--|
| Width | 120,0 mm | |
| Height | 120,0 mm | |
| Depth | 38,0 mm | |
| Diameter | 0,0 mm | |
| 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 | |

2.2 Connections

| | | |
|-----------------------|------|--|
| Electrical connection | Plug | |
|-----------------------|------|--|



3 Operating Data

3.1 Operating Data - 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 | $\Delta p = 0$ | U | | | | |
| Nominal voltage | $\Delta p = 0$ | U_N | | 230 V | | |
| Frequency | $\Delta p = 0$ | f | | 50 Hz | | |
| Power consumption Tolerance | $\Delta p = 0$ | P | | 4,4 W +- 20,0 % | | |
| Speed Tolerance | $\Delta p = 0$ | n | | 3.300 1/min +- 10,0 % | | |

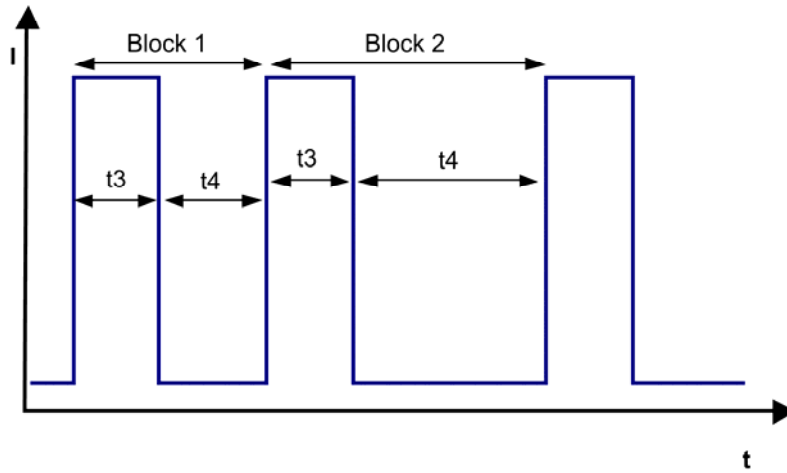
3.3 Operating Data - Electrical Interface - Output

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

| | |
|------------|------|
| Tacho type | None |
| Alarm type | None |

3.4 Electrical Features

| | | |
|-------------------------|------------------|--|
| Electronic function | Speed-Controlled | |
| Locked rotor protection | Auto restart | |



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.

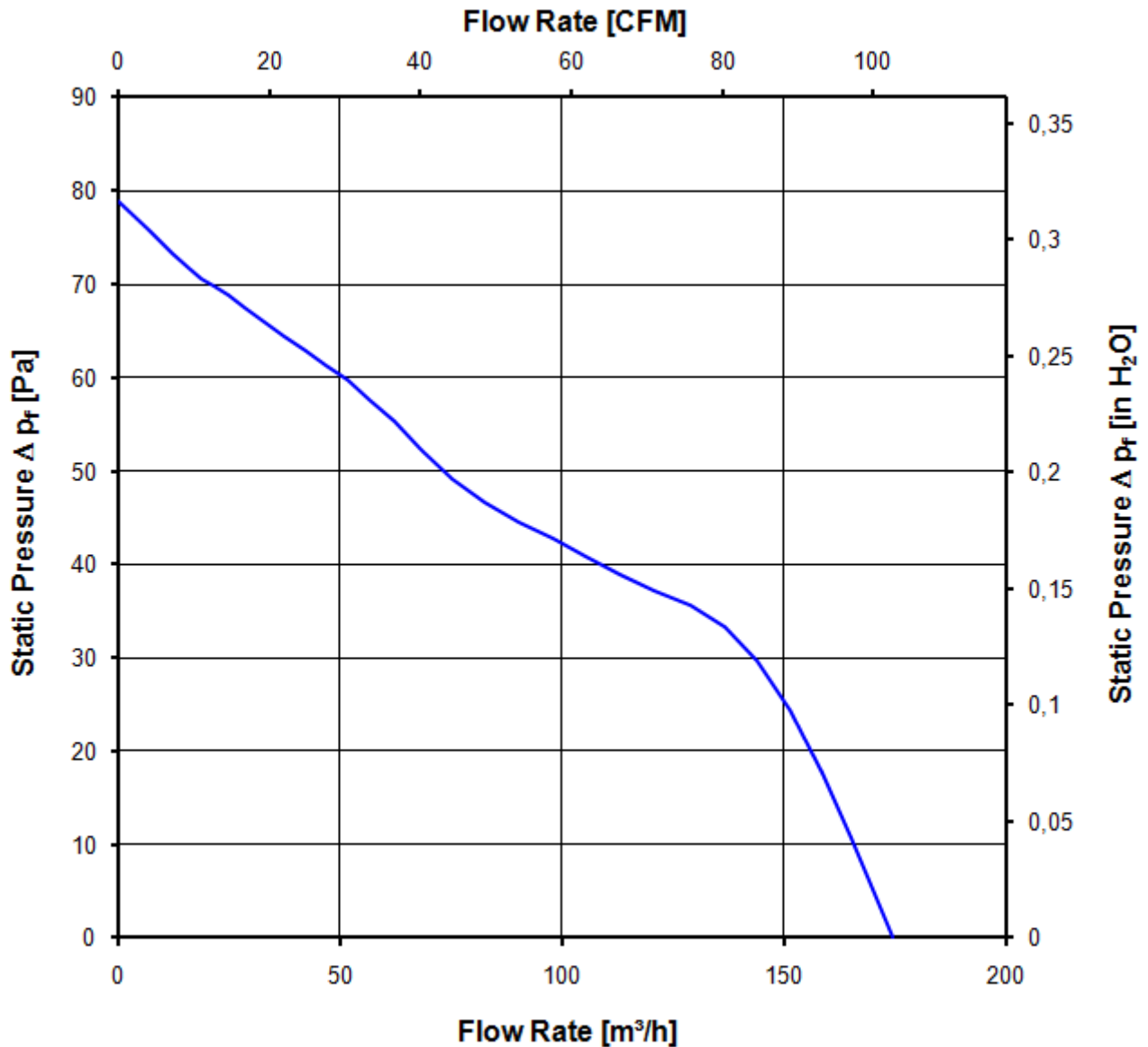
a) Operation condition:

3.300 1/min at free air flow

Frequency: 50 Hz

Nominal voltage: 230 V

| | |
|---|-------------------------|
| Max. free-air flow ($\Delta p = 0 / \dot{v} = \text{max.}$) | 175,0 m ³ /h |
| Max. static pressure ($\Delta p = \text{max.} / \dot{v} = 0$) | 78 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 3.4

a) Operation condition:

3.300 1/min at free air flow

Frequency: 50 Hz

Nominal voltage: 230 V

| | | |
|---|---------------------------------|--|
| Optimal operating point | 142,0 m ³ /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) | |

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 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/m ² d, 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. Occasionally, temporary conductivity caused by condensation occurs. **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 |

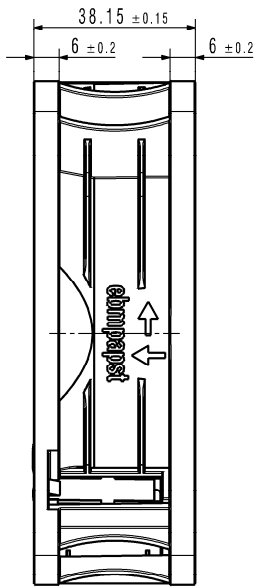
6 Reliability

6.1 General

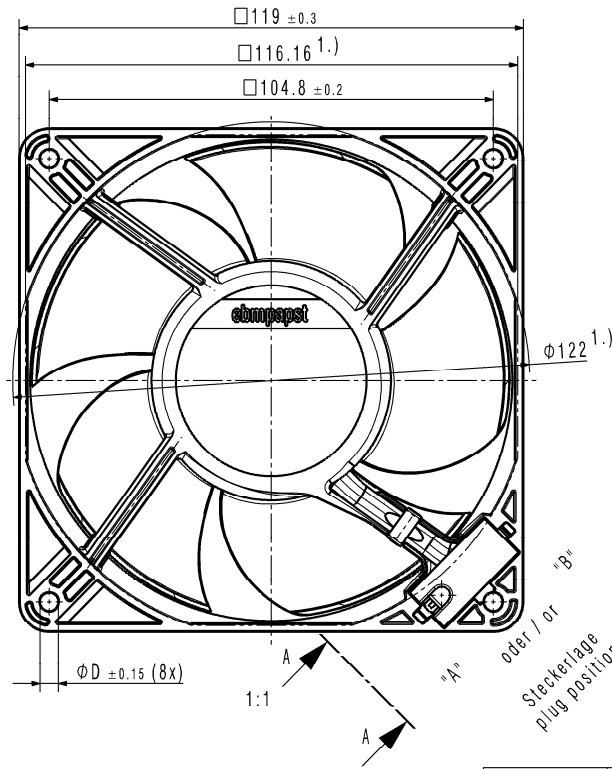
| | | |
|--|-----------|--|
| Life expectancy L10 at TU = 40 °C | 65.000 h | |
| Life expectancy L10 at TU max. | 30.000 h | |
| Life expectancy L10 Delta (40 °C) | 130.000 h | |
| Life expectancy L10 acc. to IPC 9591 at TU = 40 °C | 110.000 h | |

Copying of this document, and drawing, in whole and the use or communication of the contents thereof, are forbidden without express authoritive approval. Offenders are liable to the payment of damages. All rights are reserved in the event of the print of a patent or the registration of a utility model or design.

Schutzmarke nach DIN ISO 16016 (Anzeichen 1)
 Refer to protection notice DIN ISO 16016

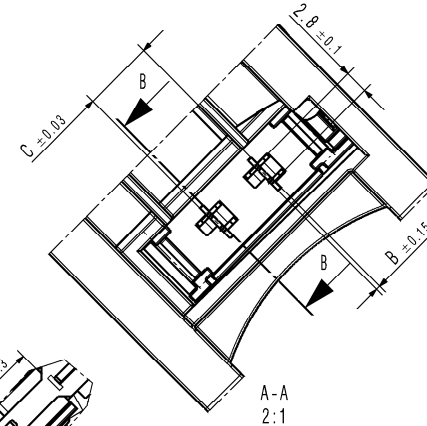


1:1

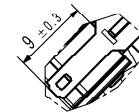


1:1

"A" oder / or "B"
Steckerlage
plug position



A-A
2:1



B-B
2:1

| Erzeugnis-Nr. product-no. | Typ model | Befestigungsbohrung Ø mounting hole Ø D | Steckermaße plug dimension B / C | Steckerlage plug position "A" / "B" |
|------------------------------|--------------|---|--|---|
| 9203509001 | ACi 4420 HH | 4.3 | 0.5 / 8.5 | "A" |
| (A) 9203509101 | ACi 4410 HH | 4.3 | 0.5 / 8.5 | "A" |

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

| | | | | | |
|--|-------------------------|---|----------------------------------|---|---|
| BSP-Status/State | Änd.-Nr./ Change-No. | CATIA-System-Version/ CATIA-system-Version | CAD-Umgebung/ CAD-Environment | Werkstoff / Material: | Volumen / Volume (cm ³): |
| | | | 9203509001 CPH000A | | Gewicht / Mass (g): |
| 3D-Referenzmodell / 3D-Reference Model | | | | Artikel / Title: | |
| Tolerierung / Tolerances: | | | | Zug.-Nr. / Drawing No: | |
| Allgemeintoleranzen / Gen. Tolerances: | | | | Ers. f. Zöhg. / Replaces: | |
| Bearb./ Strich Sperr./ Coblocks Freig./ Released. | | | | Dokumenttyp / Type of Document Teil-/dokument (Blatt/-Page) Index / Index Format / Size: | |
| ebmpapst ebm-papst St. Georgen GmbH & Co KG | | | | Masstab/Scale | |