## 1 General

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

## 2 Mechanics

### 2.1 General

| | | |
|---|---|---|
| Width | 119,0 mm | |
| Height | 119,0 mm | |
| Depth | 32,0 mm | |
| Diameter | 0,0 mm | |
| Mass | 0,350 kg | |
| Housing material | Plastic | |
| Impeller material | Plastic | |

### 2.2 Connections

| | | |
|---|---|---|
| Electrical connection | Wires | |
| Lead wire length<br>Tolerance | L = 450 mm<br>+- 10,0 mm | |
| Tube length<br>Tolerance | S = 15 mm<br>+- 5 mm | |
| Wire size (AWG) | 22 | |
| Insulation diameter | | |
| Plug | See drawing | |
| Contact | See drawing | |


| Wire | Color | Operation |
|---|---|---|
| 1 | black | L1 |
| 2 | black | L2 |

## 3 Operating Data

### 3.1 Electrical Interface - Input

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

| | |
|---|---|
| Control input | None |

**Features**

### 3.2 Electrical Operating Data

| Features | Condition | Symbol | Values | | | |
|---|---|---|---|---|---|---|
| Voltage range<br>Tolerance | | U | 85 V | | | 265 V |
| Nominal voltage | | $U_N$ | | 115V / 230V | 115 V / 230 V | |
| Frequency | | f | 50 Hz / 60 Hz | | | |
| Power consumption<br>Tolerance | Δp = 0 | P | 11 W<br>+- 20 % | | | |
| Current consumption<br>Tolerance | Δp = 0 | $I_{RMS}$ | 220 mA<br>+- 20 % | 160 mA<br>+- 25 % | 100 mA<br>+- 20 % | 95 mA<br>+- 25 % |
| Speed<br><br>Tolerance | Δp = 0 | n | 3.400 1/min<br>+- 10 % | | | |

### 3.3 Electrical Features

| | | |
|---|---|---|
| Electronic function | None | |
| Locked rotor protection | PTC | |

### 3.4 Aerodynamics

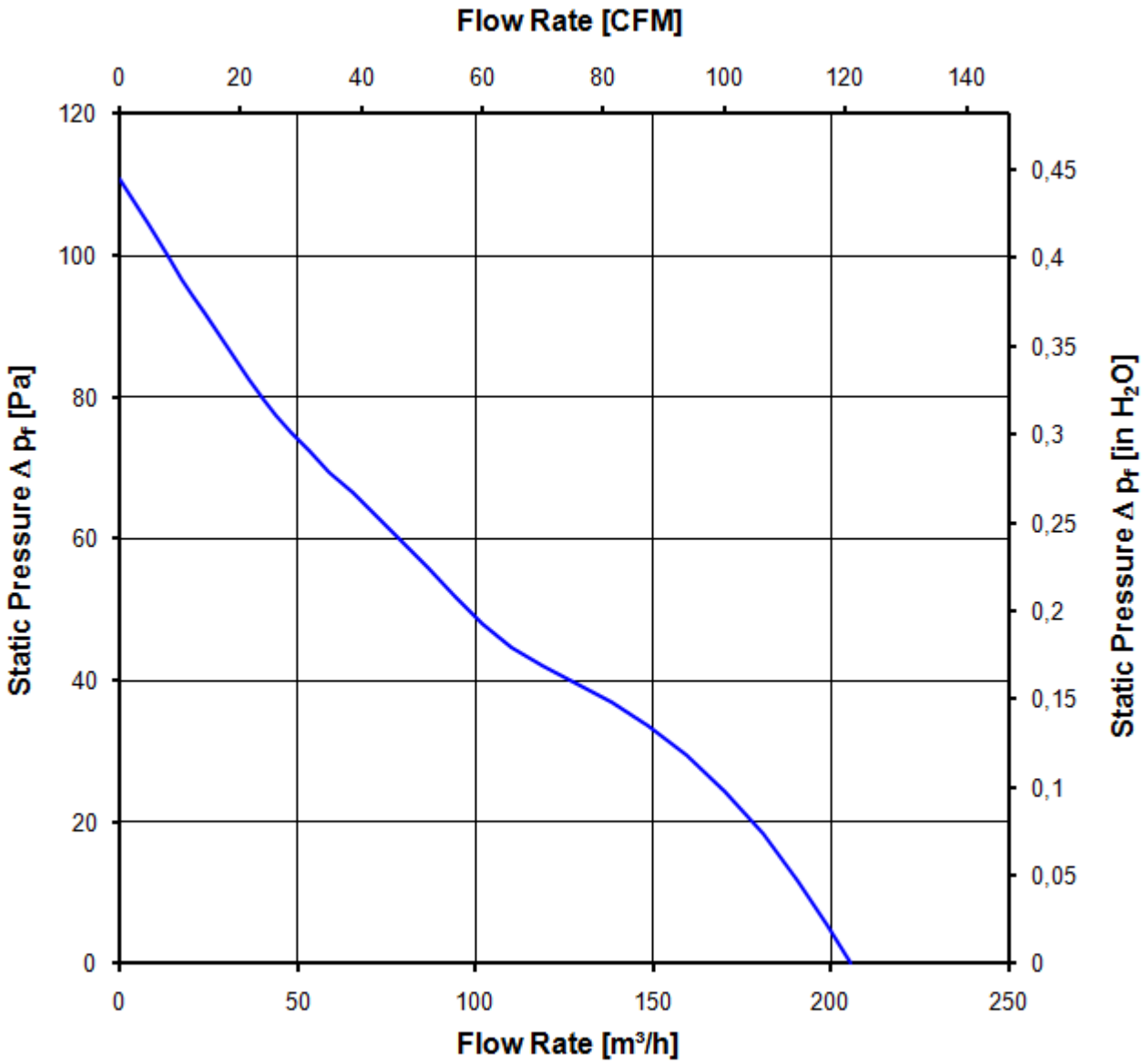
| | |
|---|---|
| Measurement conditions: | Measured with a double chamber intake rig acc. to DIN EN ISO 5801.<br>Normal air density = 1,2 kg/m3; Temperature 23℃ +/ - 3℃;<br>In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal.<br>The information is only 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:
3.400 1/min at free air flow Frequency: 50 Hz Nominal voltage: 115 V / 230 V

| | |
|---|---|
| Max. free-air flow (Δp = 0 / $\dot{V}$ = max.) | 204,0 m3/h |
| Max. static pressure (Δp = max. / $\dot{V}$ =0) | 100 Pa |

b) Operation condition:
3.400 1/min at free air flow Frequency: 60 Hz Nominal voltage: 115V / 230V

| | |
|---|---|
| Max. free-air flow (Δp = 0 / $\dot{V}$ = max.) | |
| Max. static pressure (Δp = max. / $\dot{V}$ =0) | |


Flow Rate [CFM]
0
20
40
60
80
100
120
140
120
100
80
60
40
20
0
Static Pressure Δ pf [Pa]
0,45
0,4
0,35
0,3
0,25
0,2
0,15
0,1
0,05
0
Static Pressure Δ pf [in H2O]
0
50
100
150
200
250
Flow Rate [m³/h]

### 3.5 Sound Data

| | |
|---|---|
| Measurement conditions: | Sound pressure level: 1 meter distance between microphone and the air intake.<br>Sound power level: Acc. to DIN 45635 part 38 (ISO 10302)<br>Measured in a semianchoic chamber with a background noise level of Lp(A) < 5 dB(A)<br>For further measurement conditions see chapter aerodynamics. |

a) Operation condition:
3.400 1/min at free air flow Frequency: 50 Hz Nominal voltage: 115 V / 230 V

| | | |
|---|---|---|
| Optimal operating point | 138,0 m3/h @ 34 Pa | |
| Sound power level at the optimal operating point | 6,4 bel(A) | |
| Sound pressure level at free air flow, measured in rubber bands | 51,0 dB(A) | |

b) Operation condition:
3.400 1/min at free air flow Frequency: 60 Hz Nominal voltage: 115V / 230V

| | | |
|---|---|---|
| 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. | 70 °C | |
| Min. permitted storage temperature TL min. | -40 °C | |
| Max. permitted storage temperature TL max. | 80 °C | |

### 4.2 Climatic Requirements

| | | |
|---|---|---|
| IP-protection type (certified) | IP 20 **) | |
| Humidity requirements | humid heat, constant; according to DIN EN 60068-2-78, 14 days | |
| Salt fog 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.

**) The specification of the IP protection refers to the conditions mentioned in certification of the fan. The above mentioned short description of the protection scope is not final. For detailed information of the respective protection scope and definitions, see certification as well as DIN EN 60529 (protection by housings) and ISO 20653 (for vehicles) with the letter K.

**Short description of the IP-protection type:**
Solid particle Protection: Protected against solid particles with a diameter of 12.5 mm and larger.
Protection against deliberate contact: Protected against contact to hazardous parts with a finger.
Protection against water: No protection.

## 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 conjuction with the appliance. |

| | |
|---|---|
| Test voltage HV type test | 1500 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

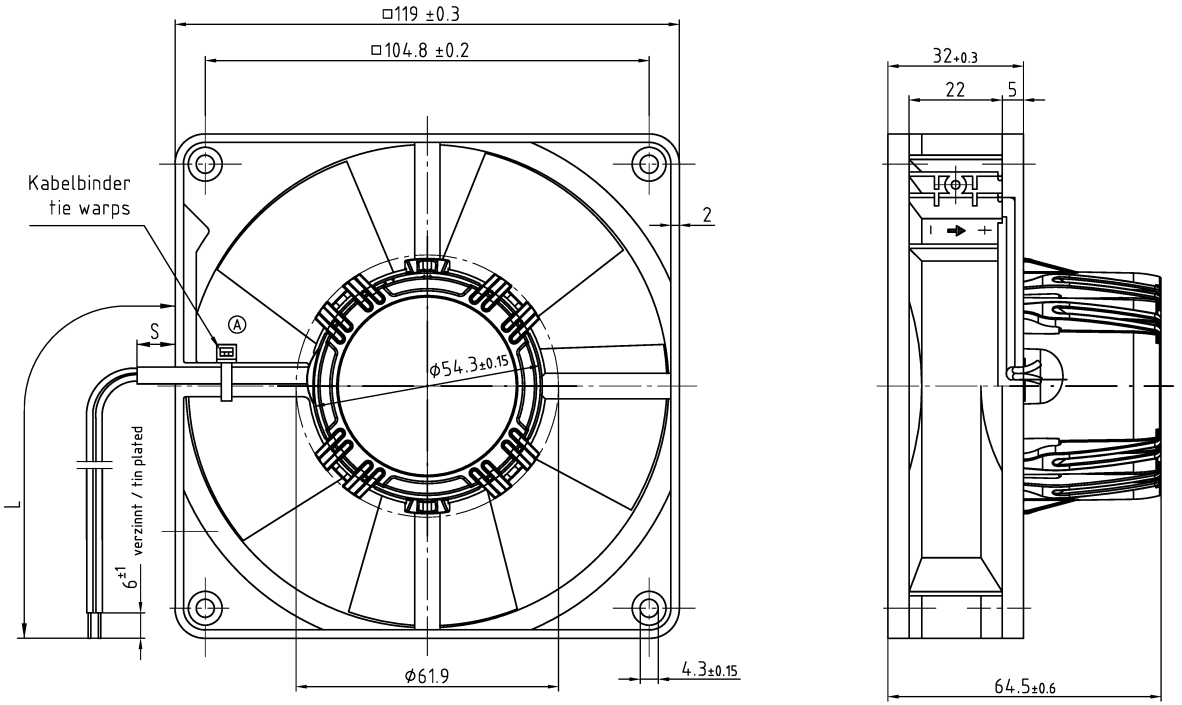
| | | |
|---|---|---|
| CE | EC Declaration of Conformity | Yes |
| EAC | Eurasian Conformity | Yes |
| UL | Underwriters Laboratories | Yes / UL507, Electric Fans |
| VDE | Association for Electrical, Electronic and Information Technologies | Yes / Approval acc. to EN 60335 (VDE 0700) - Safety for household and similar electrical appliances |
| 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 |

According to the guidelines on the application of Directive 2006/95/EC, chapter III: Scope of the "low voltage" directive, paragraph: Are "components" included in the scope? the following has to be applied:
However, some types of electrical devices, designed and manufactured for being uses as basic components to be incorporated into other electrical equipment, are such that their safety to a very large extent depends on how they are integrated into the final product and the overall characteristics of the final product. These basic components include electronic and certain other components.
Taking into account these objectives of the "Low Voltage" Directive, such basic components, the safety of which can only, to a very large extend, be assessed taking into account, how they are incorporated and for which a risk assessment cannot be undertaken, then they are not covered as such by the Directive. In particular, they must not be CE marked unless covered by other Community legislation that requires CE marking.

## 6 Reliability

### 6.1 General

| | | |
|---|---|---|
| Life expectancy L10 at TU = 40 ℃ | 45.000 h | |
| Life expectancy L10 at TU max. | 20.000 h | |
| Life expectancy L10 acc. to IPC 9591 at TU = 40 ℃ | 75.0 00 h | |




Anzahl und Länge der Litzen (L) sowie Schlauchlänge (S) siehe Produktspezifikation
length (L) and number of wires and lenght (S) of tube see design specification

Axialspiel bei -Kugellagerung: 0 (Federverspannung)
-Gleitlagerung (G): 0.1 - 0.5mm
axial clearance by - ball bearings: 0 (spring-tension)
- floating bearings (G): 0.1-0.5mm

| | | | |
|---|---|---|---|
| Tolerierung/Tolerances: DIN 7167<br>Allgemeintoleranzen/ Gen. tolerances: DIN ISO 2768-mK-E | | | |
| | Datum/Date | Name/Name | Artikel/ Title: AC maxx axial fan |
| Bearb./Drawn: | | | Massstab/scale |
| | Index/Index | Aend.-Nr./Change-No. | Zchg.-Nr./ Dwg.-No.: |
| gepr. u. zur Verwendung freigegeben/Checked for release von/by am/on | | | Blatt/Page |
| ebm-papst St. Georgen GmbH & Co. KG | | | Ers.f.Zchg./ Replaces: A3 |

12/03