**A3G710-AO85-21**

# EC axial fan - HyBlade

sickled blades (S series)



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## Nominal data

| | |
|---|---|
| **Type** | **A3G710-AO85-21** |
| **Motor** | **M3G112-IA** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed (rpm) | $min^{-1}$ | 830 |
| Power input | W | 700 |
| Current draw | A | 3.1 |
| Max. back pressure | Pa | 100 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 60 |

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

## Data according to ErP directive

| | | Actual | Request 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 41.3 | 32.5 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 48.8 | 40 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power input $P_{ed}$ | kW | 0.66 |
| 09 Air flow $q_v$ | $m^3/h$ | 10435 |
| 09 Pressure increase $p_{fs}$ | Pa | 87 |
| 10 Speed (rpm) n | $min^{-1}$ | 835 |
| 11 Specific ratio* | | 1.00 |

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

* Specific ratio = 1 + $p_{fs}$ / 100 000 Pa

LU-120942

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## Technical features

| | |
|---|---|
| **Mass** | 12 kg |
| **Size** | 710 mm |
| **Surface of rotor** | Coated in black |
| **Material of electronics housing** | Die-cast aluminium, coated in black |
| **Material of blades** | Aluminium sheet insert, sprayed with PP plastic |
| **Number of blades** | 5 |
| **Blade angle** | 0° |
| **Direction of air flow** | "V" |
| **Direction of rotation** | Counter-clockwise, seen on rotor |
| **Type of protection** | IP 54 |
| **Insulation class** | "B" |
| **Humidity (F)/environmental protection class (H)** | F4-1 |
| **Max. permissible ambient motor temp. (transp./ storage)** | +80 °C |
| **Min. permissible ambient motor temp. (transp./storage)** | -40 °C |
| **Mounting position** | Shaft horizontal or rotor on bottom |
| **Condensate discharge holes** | Rotor-side |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 10 mA<br>- Alarm relay<br>- Motor current limit<br>- PFC, active<br>- Soft start<br>- Control input 10-0 VDC Control interface with SELV potential safely disconnected from the mains<br>- Over-temperature protected electronics / motor<br>- Line undervoltage / phase failure detection |
| **EMC interference immunity** | Acc. to EN 61000-6-2 (industrial environment) |
| **EMC harmonics** | Acc. to EN 61000-3-2/3 |
| **EMC interference emission** | Acc. to EN 61000-6-4 (industrial environment) |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 3.5 mA |
| **Motor protection** | Thermal overload protector (TOP) wired internally |
| **Cable exit** | Variable |
| **Protection class** | I (if protective earth is connected by customer) |
| **Product conforming to standard** | EN 61800-5-1; CE |
| **Approval** | CCC; EAC |

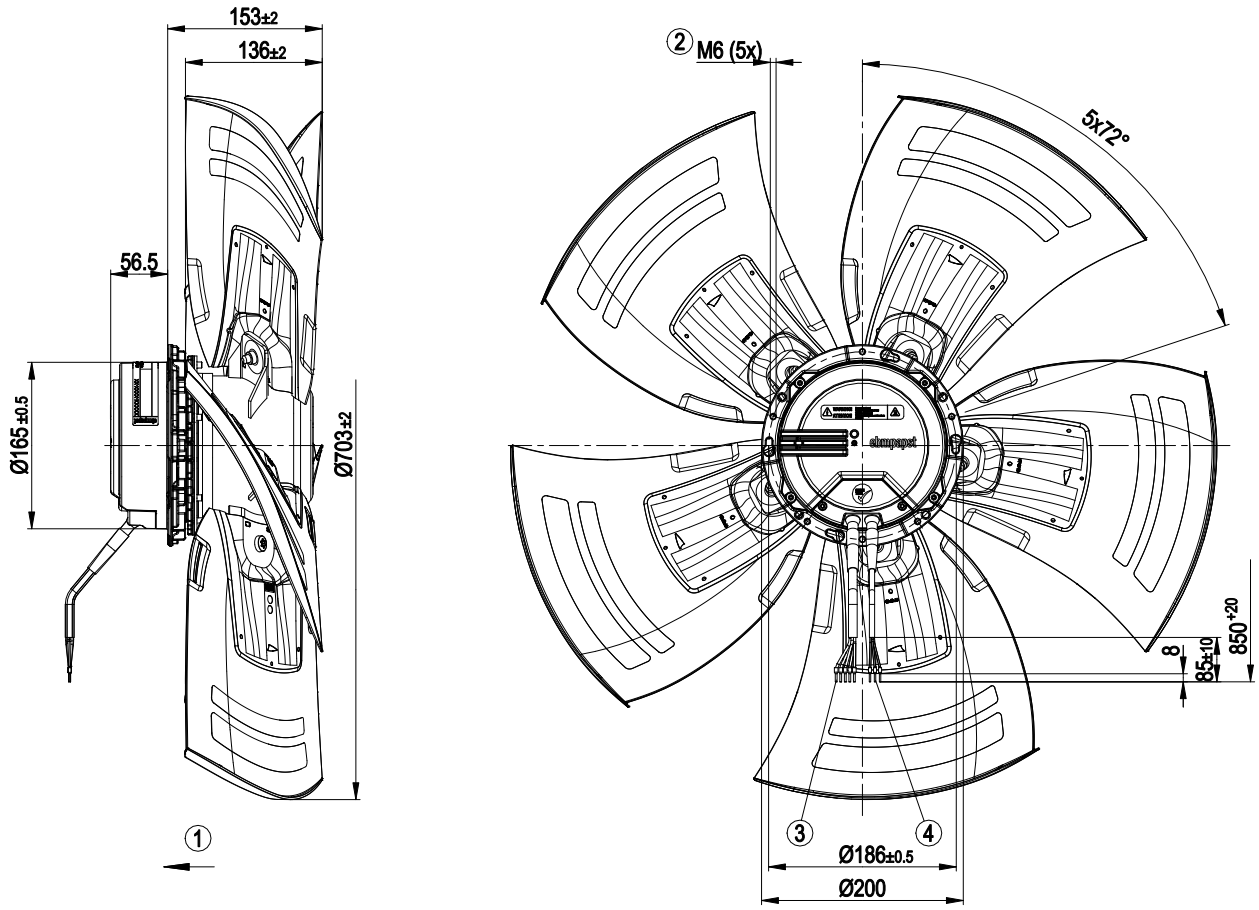


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## Product drawing




| | |
|---|---|
| 1 | Direction of air flow "V" |
| 2 | Depth of screw max. 16 mm |
| 3 | Connection line PVC AWG18, 5x crimped core-end sleeves |
| 4 | Connection line PVC AWG22, 3x crimped core-end sleeves |

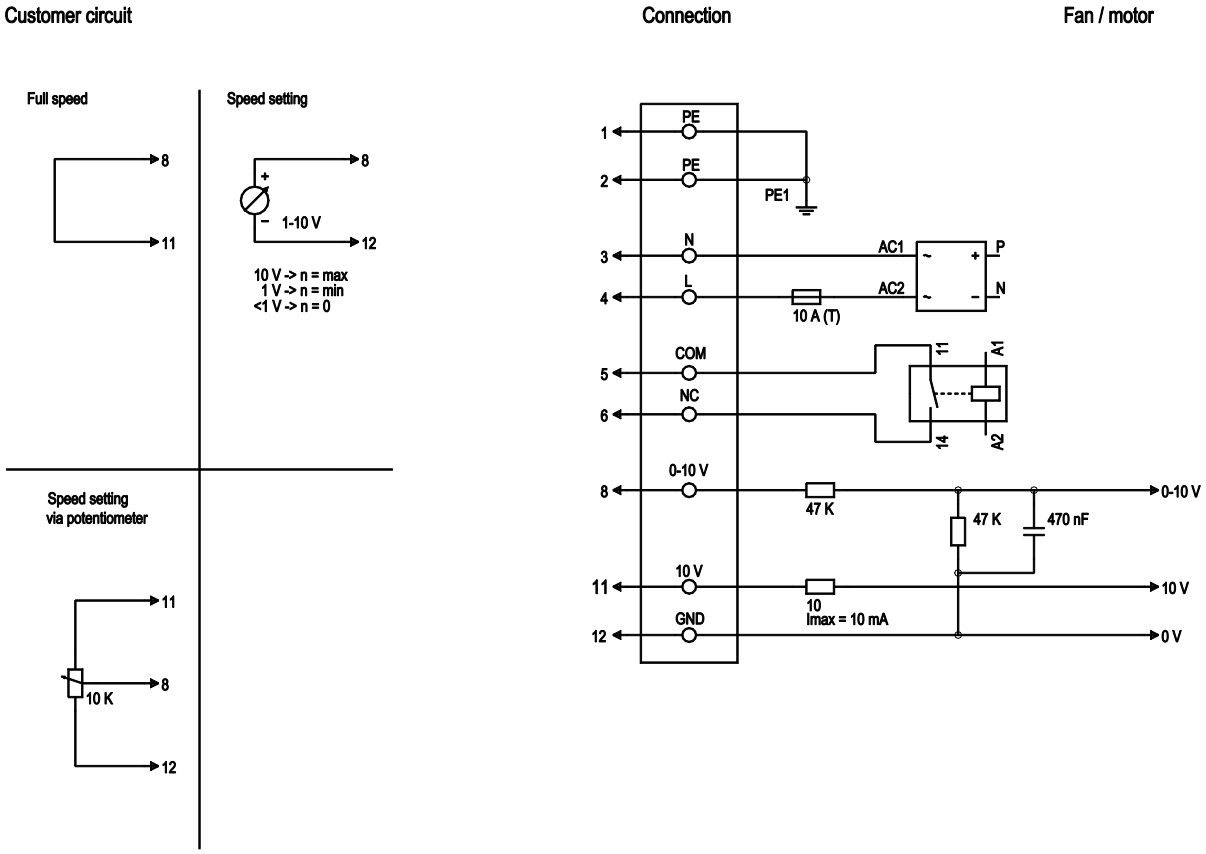


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## Connection screen




| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| 1 | 1,2 | PE | green/yellow | Protective earth |
| 1 | 3 | N | blue | Supply voltage, neutral conductor, 50/60 Hz |
| 1 | 4 | L | black | Supply voltage, phase, 50/60 Hz |
| 1 | 5 | COM | white 1 | Floating status message contact, break for failure (2 A, max. 250 VAC, min. 10 mA, AC1) |
| 1 | 6 | NC | white 2 | Floating status message contact, break for failure |
| 2 | 8 | 0-10 V | yellow | Control input, set value 0-10 VDC, impedance 100 kΩ, SELV |
| 2 | 11 | 10 VDC | red | Voltage output 10 VDC (+/-3%), max. 10 mA, supply voltage for external devices (e.g. potentiometer), SELV |
| 2 | 12 | GND | blue | Reference mass for control interface, SELV |

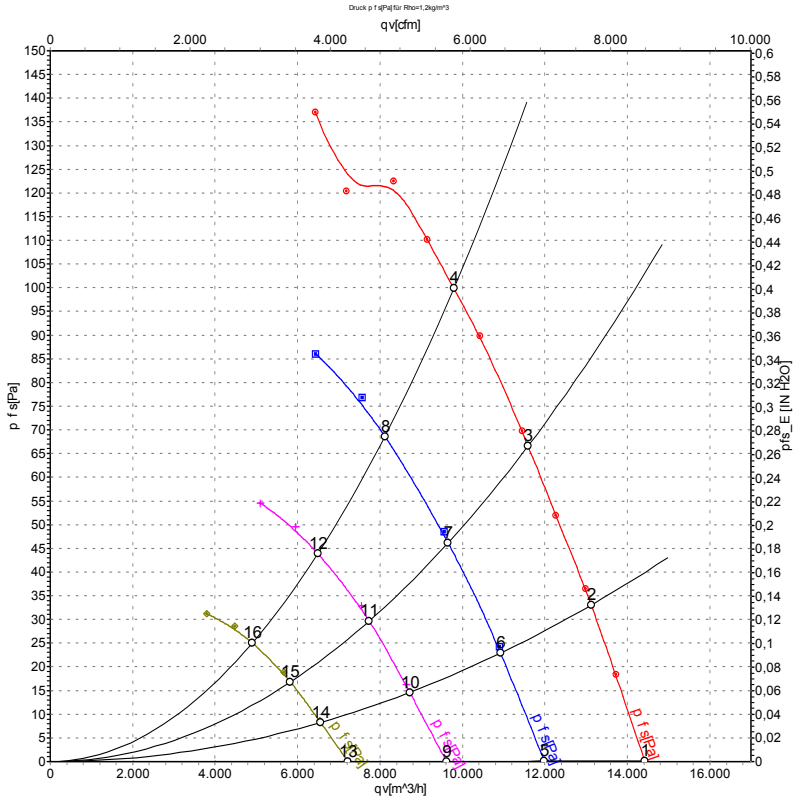


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## Charts: Air flow 50 Hz




Measurement: LU-120942-1
Measurement: LU-120952-1
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Measurement: LU-120954-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

## Measured values

| | U | f | n | $P_{ed}$ | I | $LpA_{in}$ | $LwA_{in}$ | $LwA_{out}$ | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | dB(A) | dB(A) | dB(A) | $m^3/h$ | Pa | cfm | inH2O |
| 1 | 230 | 50 | 830 | 448 | 2.10 | 62 | 69 | 68 | 14420 | 0 | 8485 | 0.00 |
| 2 | 230 | 50 | 830 | 536 | 2.45 | 61 | 67 | 67 | 13120 | 33 | 7720 | 0.13 |
| 3 | 230 | 50 | 830 | 618 | 2.78 | 62 | 68 | 68 | 11590 | 67 | 6820 | 0.27 |
| 4 | 230 | 50 | 830 | 700 | 3.10 | 66 | 73 | 72 | 9795 | 100 | 5765 | 0.40 |
| 5 | 230 | 50 | 690 | 260 | 1.23 | 58 | 64 | 63 | 11980 | 0 | 7050 | 0.00 |
| 6 | 230 | 50 | 690 | 302 | 1.41 | 58 | 63 | 63 | 10920 | 24 | 6425 | 0.10 |
| 7 | 230 | 50 | 690 | 352 | 1.64 | 58 | 64 | 64 | 9650 | 47 | 5680 | 0.19 |
| 8 | 230 | 50 | 690 | 394 | 1.82 | 62 | 68 | 68 | 8115 | 69 | 4775 | 0.28 |
| 9 | 230 | 50 | 550 | 144 | 0.68 | 53 | 59 | 58 | 9610 | 0 | 5655 | 0.00 |
| 10 | 230 | 50 | 550 | 170 | 0.81 | 53 | 58 | 58 | 8720 | 15 | 5135 | 0.06 |
| 11 | 230 | 50 | 550 | 190 | 0.90 | 54 | 60 | 59 | 7735 | 30 | 4555 | 0.12 |
| 12 | 230 | 50 | 550 | 211 | 0.99 | 57 | 63 | 63 | 6490 | 44 | 3820 | 0.18 |
| 13 | 230 | 50 | 415 | 74 | 0.43 | 48 | 53 | 52 | 7220 | 0 | 4250 | 0.00 |
| 14 | 230 | 50 | 415 | 84 | 0.48 | 47 | 52 | 52 | 6555 | 8 | 3860 | 0.03 |
| 15 | 230 | 50 | 415 | 92 | 0.51 | 49 | 54 | 54 | 5825 | 17 | 3430 | 0.07 |
| 16 | 230 | 50 | 415 | 100 | 0.51 | 51 | 57 | 57 | 4900 | 25 | 2885 | 0.10 |

U = Supply voltage · f = Frequency · n = Speed (rpm) · $P_{ed}$ = Power input · I = Current draw · $LpA_{in}$ = Sound pressure level inlet side · $LwA_{in}$ = Sound power level inlet side · $LwA_{out}$ = Sound power level outlet side
$q_V$ = Air flow · $p_{fs}$ = Pressure increase



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