**W3G500-GM56-21**

# EC axial fan - HyBlade®

sickled blades (S series)



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ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **W3G500-GM56-21** |
| **Motor** | **M3G112-EA** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed | $min^{-1}$ | 1420 |
| Power input | W | 750 |
| Current draw | A | 3.4 |
| Max. back pressure | Pa | 175 |
| 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

| | |
|---|---|
| Installation category | A |
| Efficiency category | Static |
| Variable speed drive | Yes |
| Specific ratio* | 1.00 |

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

| | | Actual | Request 2013 | Request 2015 |
|---|---|---|---|---|
| Overall efficiency $\eta_{es}$ | % | 41.6 | 28.8 | 32.8 |
| Efficiency grade N | | 48.8 | 36 | 40 |
| Power input $P_{ed}$ | kW | 0.73 | | |
| Air flow $q_v$ | $m^3/h$ | 5850 | | |
| Pressure increase $p_{fs}$ | Pa | 173 | | |
| Speed n | $min^{-1}$ | 1425 | | |

Data definition with optimum efficiency. LU-121382
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.



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## Technical features

| | |
|---|---|
| **Mass** | 14.7 kg |
| **Size** | 500 mm |
| **Surface of rotor** | Coated in black |
| **Material of electronics housing** | Die-cast aluminium, coated in black |
| **Material of blades** | Press-fitted sheet steel blank, sprayed with PP plastic |
| **Material of wall ring** | Sheet steel, pre-galvanised and coated in black plastic (RAL 9005) |
| **Material of guard grille** | Steel, coated in black plastic (RAL9005) |
| **Number of blades** | 5 |
| **Direction of air flow** | "V" |
| **Direction of rotation** | Counter-clockwise, seen on rotor |
| **Type of protection** | IP 54 |
| **Insulation class** | "B" |
| **Humidity class** | 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; rotor on top on request |
| **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 0-10 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** | EAC |

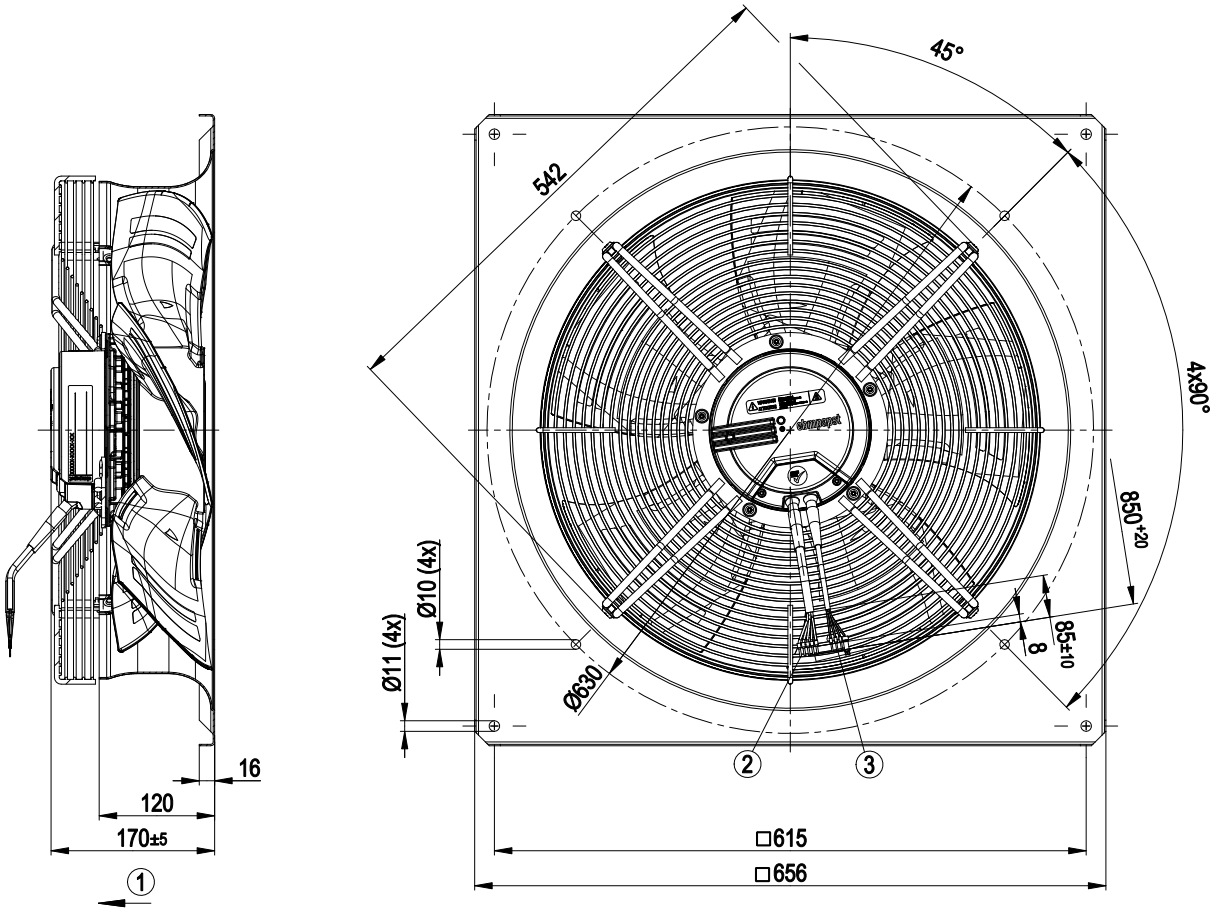


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## Product drawing




| | |
|---|---|
| 1 | Direction of air flow "V" |
| 2 | Connection line PVC AWG18, 5 x crimped core-end sleeve |
| 3 | Connection line PVC AWG22, 3 x crimped core-end sleeve |

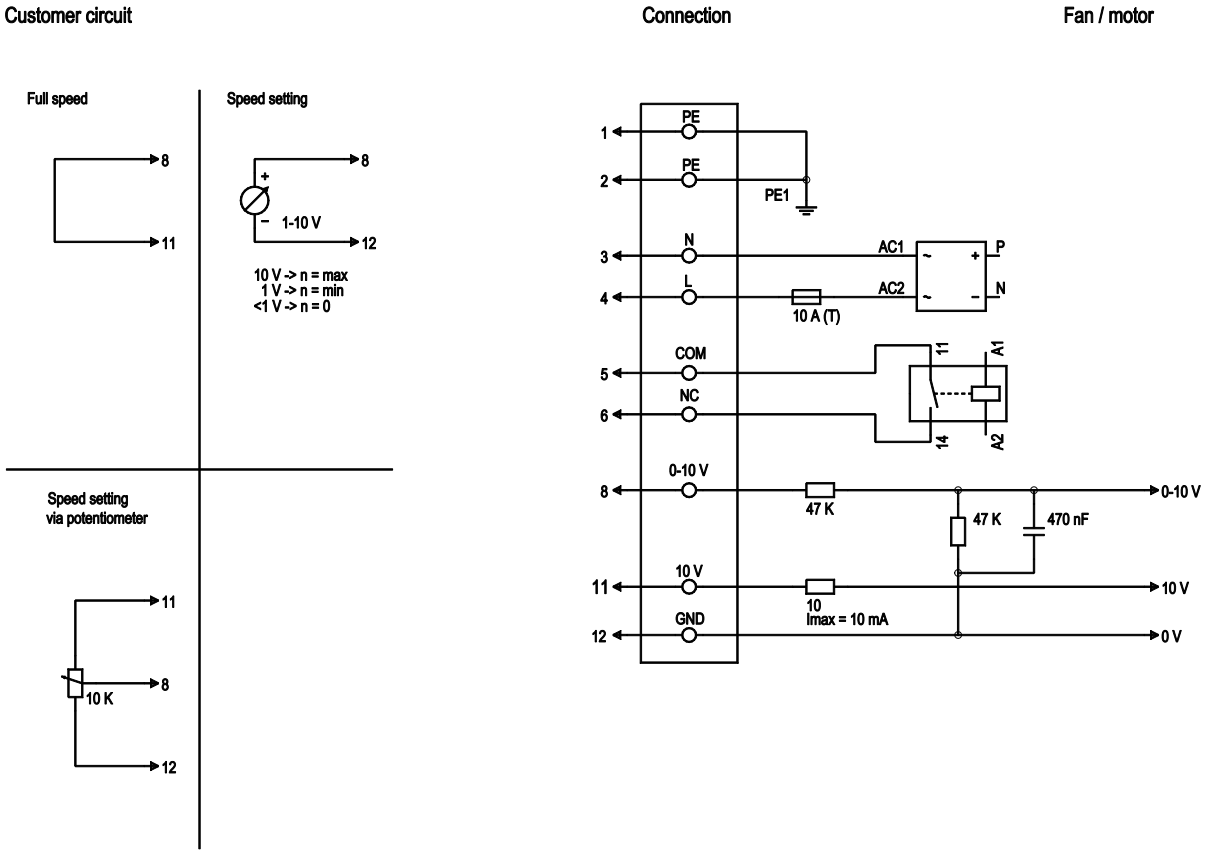


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## Connection screen




| 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 |

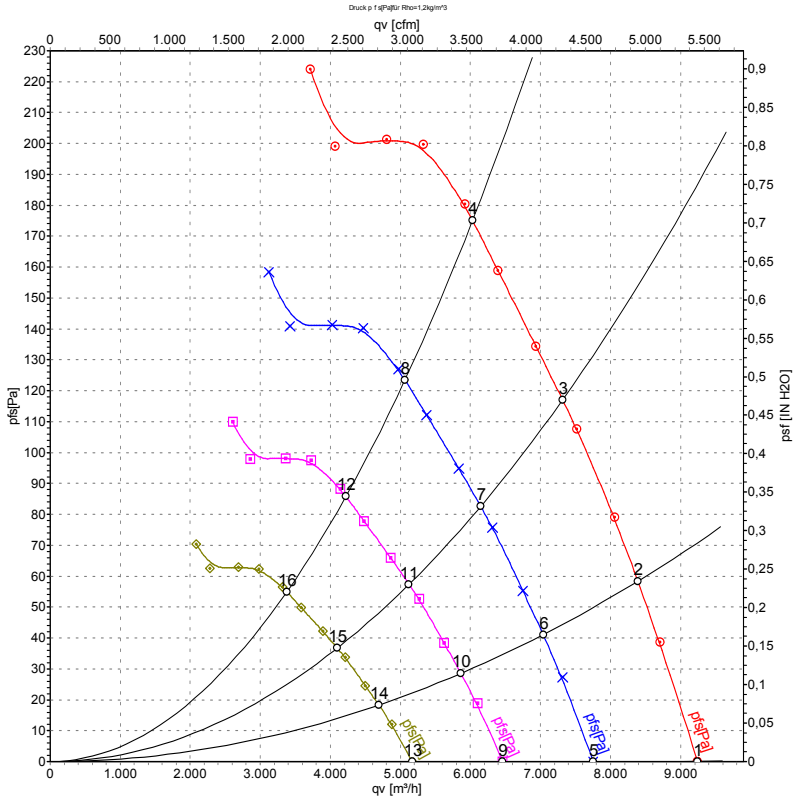


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## Charts: Air flow 50 Hz




Measurement: LU-131222

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 | $LpA_{in}$ | $LwA_{in}$ | $LwA_{out}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | dB(A) | dB(A) | dB(A) | $m^3/h$ | Pa |
| 1 | 230 | 50 | 1420 | 554 | 2.52 | 70 | 77 | 77 | 9245 | 0 |
| 2 | 230 | 50 | 1420 | 633 | 2.85 | 67 | 75 | 75 | 8390 | 58 |
| 3 | 230 | 50 | 1420 | 696 | 3.12 | 66 | 73 | 73 | 7315 | 117 |
| 4 | 230 | 50 | 1420 | 750 | 3.40 | 66 | 74 | 73 | 6030 | 175 |
| 5 | 230 | 50 | 1200 | 327 | 1.49 | 66 | 74 | 74 | 7755 | 0 |
| 6 | 230 | 50 | 1200 | 373 | 1.68 | 64 | 71 | 71 | 7040 | 41 |
| 7 | 230 | 50 | 1200 | 413 | 1.85 | 62 | 69 | 69 | 6145 | 83 |
| 8 | 230 | 50 | 1200 | 443 | 1.97 | 62 | 70 | 70 | 5065 | 124 |
| 9 | 230 | 50 | 1000 | 189 | 0.86 | 62 | 70 | 70 | 6460 | 0 |
| 10 | 230 | 50 | 1000 | 216 | 0.97 | 60 | 67 | 67 | 5865 | 28 |
| 11 | 230 | 50 | 1000 | 239 | 1.07 | 58 | 65 | 65 | 5125 | 57 |
| 12 | 230 | 50 | 1000 | 256 | 1.14 | 58 | 66 | 66 | 4220 | 86 |
| 13 | 230 | 50 | 800 | 97 | 0.44 | 58 | 65 | 65 | 5170 | 0 |
| 14 | 230 | 50 | 800 | 111 | 0.50 | 55 | 62 | 62 | 4695 | 18 |
| 15 | 230 | 50 | 800 | 122 | 0.55 | 53 | 60 | 60 | 4100 | 37 |
| 16 | 230 | 50 | 800 | 131 | 0.59 | 54 | 61 | 61 | 3375 | 55 |

U = Supply voltage · f = Frequency · n = Speed · $P_{ed}$ = 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
qv = Air flow · $p_{fs}$ = Pressure increase



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