

A3G500-AN33-01

## EC axial fan - HyBlade®

sickled blades (S series)



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## Nominal data

|                          |                   |            |
|--------------------------|-------------------|------------|
| Type                     | A3G500-AN33-01    |            |
| Motor                    | M3G112-GA         |            |
| Phase                    |                   | 3~         |
| Nominal voltage          | VAC               | 400        |
| Nominal voltage range    | VAC               | 380 .. 480 |
| Frequency                | Hz                | 50/60      |
| Type of data definition  |                   | ml         |
| Speed                    | min <sup>-1</sup> | 1600       |
| Power input              | W                 | 980        |
| Current draw             | A                 | 1.6        |
| 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 =  $1 + p_{fs} / 100\,000\text{ Pa}$

|                                |                   | Actual | Request 2013 | Request 2015 |
|--------------------------------|-------------------|--------|--------------|--------------|
| Overall efficiency $\eta_{es}$ | %                 | 43.5   | 29.7         | 33.7         |
| Efficiency grade N             |                   | 49.8   | 36           | 40           |
| Power input $P_{ed}$           | kW                | 1      |              |              |
| Air flow $q_v$                 | m <sup>3</sup> /h | 6630   |              |              |
| Pressure increase $p_{fs}$     | Pa                | 218    |              |              |
| Speed n                        | min <sup>-1</sup> | 1610   |              |              |

Data definition with optimum efficiency. LU-121588  
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.



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## Technical features

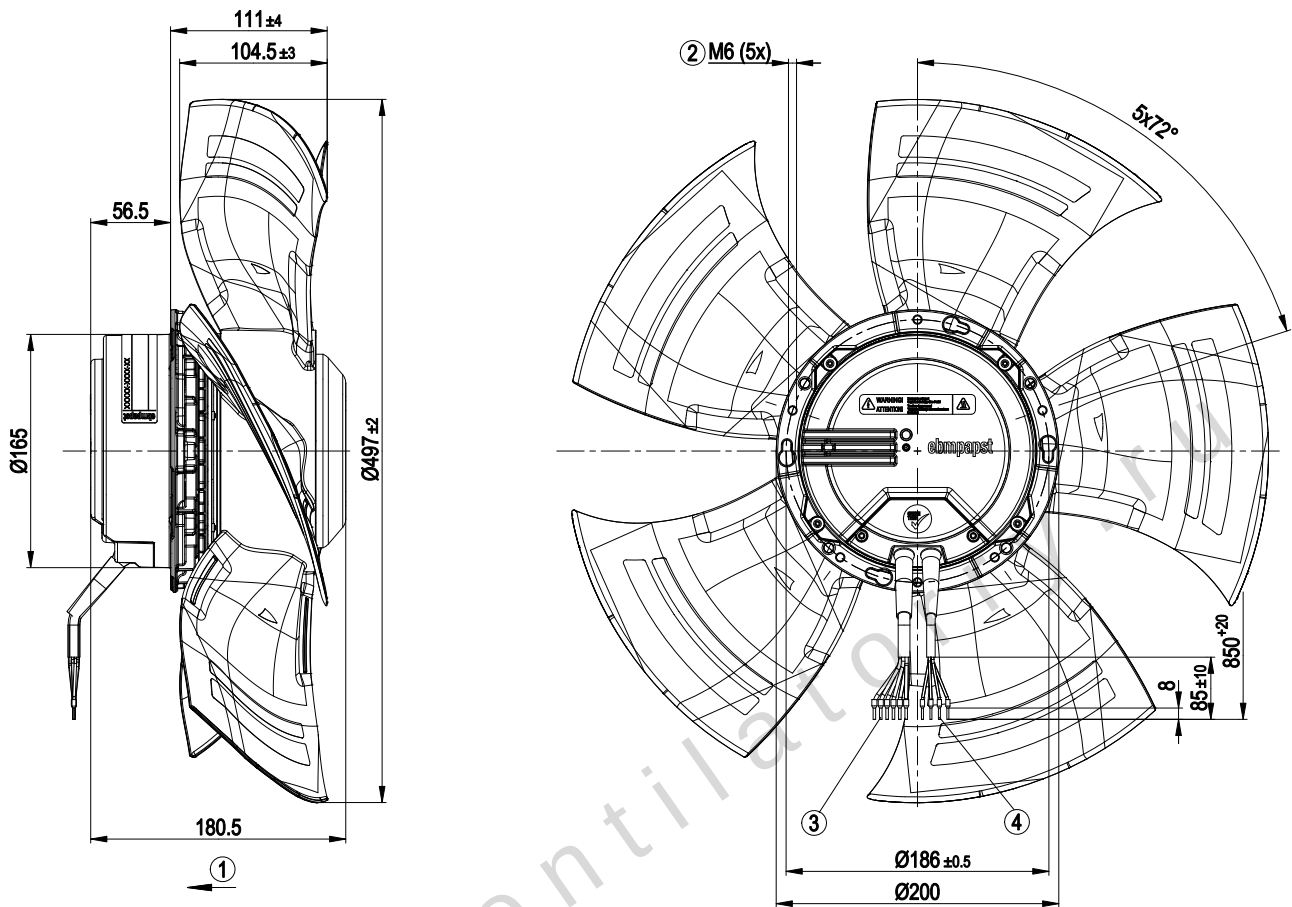
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mass                                                               | 9.4 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                                                                                                                                                                                                                                                                                                                                                                                                             |
| 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                                                 | <ul style="list-style-type: none"> <li>- Output 10 VDC, max. 10 mA</li> <li>- Alarm relay</li> <li>- Integrated PID controller</li> <li>- Motor current limit</li> <li>- PFC, passive</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Over-temperature protected electronics / motor</li> <li>- Line undervoltage / phase failure detection</li> </ul> |
| 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



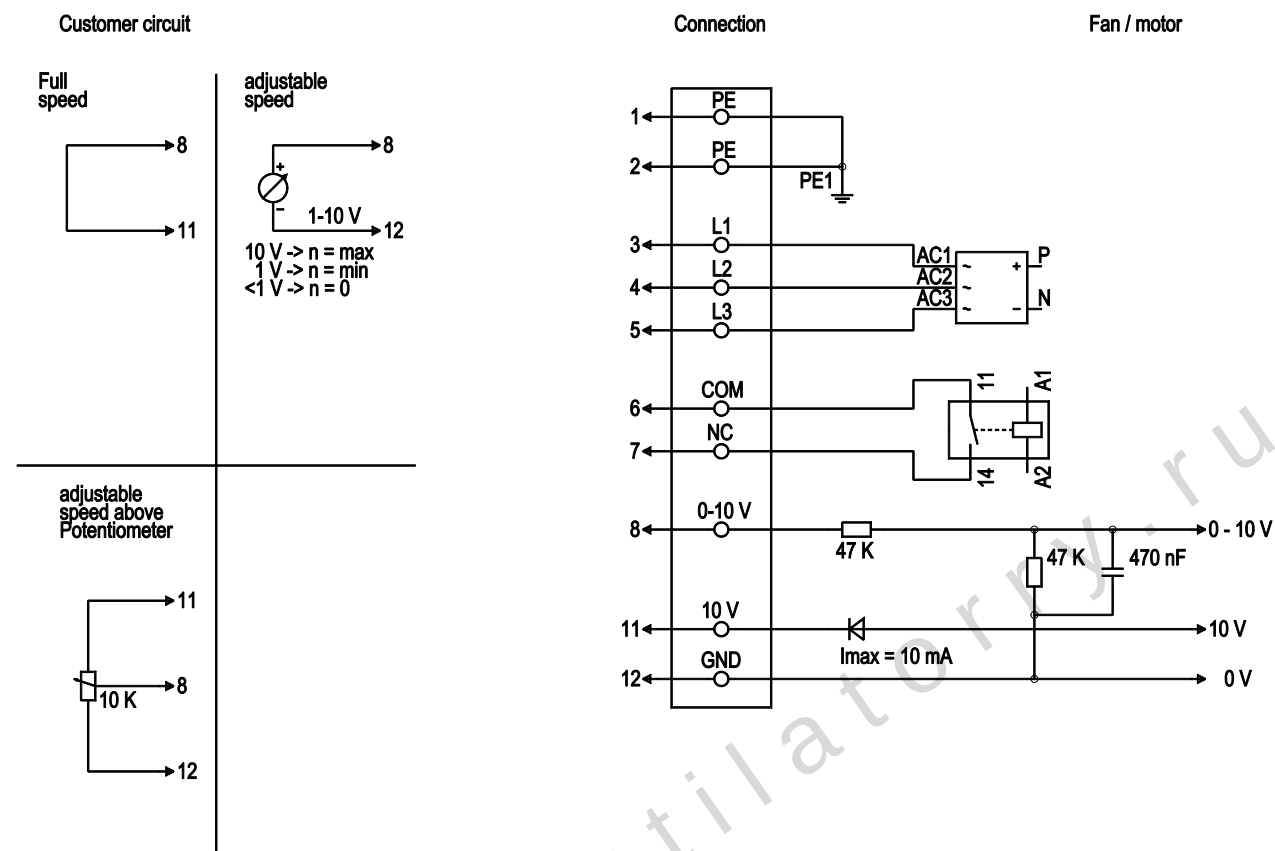
|   |                                                        |
|---|--------------------------------------------------------|
| 1 | Direction of air flow "V"                              |
| 2 | Connection line PVC AWG18, 6x crimped core-end sleeves |
| 3 | Connection line PVC AWG22, 3x crimped core-end sleeves |
| 4 | Depth of screw max. 16 mm                              |

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## Connection screen



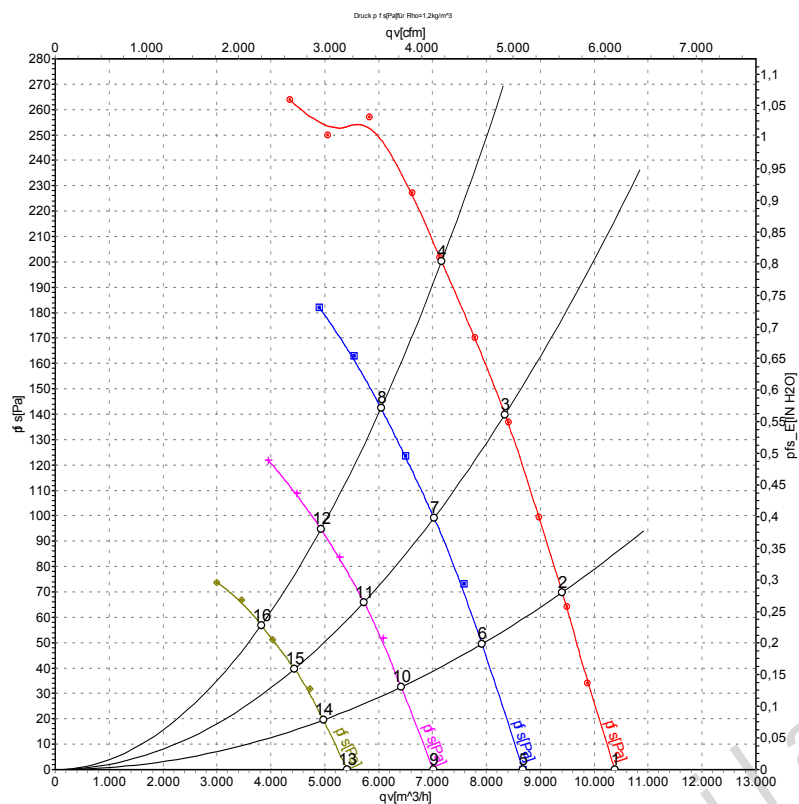
| No. | Conn.   | Designation | Colour       | Function / assignment                                                                                 |
|-----|---------|-------------|--------------|-------------------------------------------------------------------------------------------------------|
| 1   | 1, 2    | PE          | green/yellow | Protective earth                                                                                      |
| 1   | 3, 4, 5 | L1, L2, L3  | black        | Supply voltage 50 / 60 Hz                                                                             |
| 1   | 6       | COM         | white 1      | Floating status contact, break for failure (2 A, max. 250 VAC, min. 10 mA, AC1)                       |
| 1   | 7       | 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 kOhm, SELV                                         |
| 2   | 11      | + 10 V      | red          | Voltage output 10 VDC (+/-3%), max. 10 mA, supply voltage for ext. devices (e.g. potentiometer), SELV |
| 2   | 12      | GND         | blue         | Reference mass for control interface, SELV                                                            |

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## Charts: Air flow 50 Hz



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 <sub>ed</sub> | I    | LpA <sub>in</sub> | LwA <sub>in</sub> | LwA <sub>out</sub> | qv                | p <sub>fs</sub> |
|----|-----|----|-------------------|-----------------|------|-------------------|-------------------|--------------------|-------------------|-----------------|
|    | V   | Hz | min <sup>-1</sup> | W               | A    | dB(A)             | dB(A)             | dB(A)              | m <sup>3</sup> /h | Pa              |
| 1  | 400 | 50 | 1600              | 680             | 1.20 | 72                | 80                | 80                 | 10390             | 0               |
| 2  | 400 | 50 | 1600              | 827             | 1.33 | 70                | 77                | 77                 | 9405              | 70              |
| 3  | 400 | 50 | 1600              | 907             | 1.41 | 68                | 75                | 75                 | 8345              | 140             |
| 4  | 400 | 50 | 1600              | 980             | 1.60 | 68                | 76                | 75                 | 7170              | 200             |
| 5  | 400 | 50 | 1350              | 434             | 0.78 | 69                | 76                | 76                 | 8680              | 0               |
| 6  | 400 | 50 | 1350              | 489             | 0.85 | 66                | 73                | 73                 | 7915              | 51              |
| 7  | 400 | 50 | 1350              | 538             | 0.91 | 64                | 71                | 71                 | 7025              | 99              |
| 8  | 400 | 50 | 1350              | 577             | 0.95 | 64                | 71                | 71                 | 6045              | 142             |
| 9  | 400 | 50 | 1100              | 256             | 0.51 | 64                | 72                | 71                 | 7015              | 0               |
| 10 | 400 | 50 | 1100              | 282             | 0.55 | 62                | 69                | 68                 | 6420              | 33              |
| 11 | 400 | 50 | 1100              | 308             | 0.60 | 59                | 67                | 66                 | 5730              | 66              |
| 12 | 400 | 50 | 1100              | 329             | 0.64 | 59                | 66                | 65                 | 4930              | 95              |
| 13 | 400 | 50 | 850               | 133             | 0.31 | 60                | 67                | 66                 | 5415              | 0               |
| 14 | 400 | 50 | 850               | 145             | 0.32 | 57                | 64                | 63                 | 4975              | 20              |
| 15 | 400 | 50 | 850               | 155             | 0.34 | 55                | 62                | 61                 | 4445              | 40              |
| 16 | 400 | 50 | 850               | 163             | 0.36 | 53                | 60                | 60                 | 3820              | 57              |

U = Supply voltage · f = Frequency · n = Speed · P<sub>ed</sub> = Power input · I = Current draw · LpA<sub>in</sub> = Sound pressure level inlet side · LwA<sub>in</sub> = Sound power level inlet side · LwA<sub>out</sub> = Sound power level outlet side  
 qv = Air flow · p<sub>fs</sub> = Pressure increase