**W3G500-GA74-21**

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle

**ebm-papst Mulfingen GmbH & Co. KG**
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **W3G500-GA74-21** |
| **Motor** | **M3G112-EA** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| State | | prelim. |
| Speed | $min^{-1}$ | 1440 |
| Power input | W | 740 |
| Current draw | A | 3.25 |
| Max. back pressure | Pa | 180 |
| 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 2015 |
|---|---|---|---|
| Overall efficiency $\eta_{es}$ | % | 42.6 | 32.8 |
| Efficiency grade N | | 49.8 | 40 |
| Power input $P_{ed}$ | kW | 0.73 | |
| Air flow $q_v$ | $m^3/h$ | 5285 | |
| Pressure increase $p_{fs}$ | Pa | 196 | |
| Speed n | $min^{-1}$ | 1440 | |

Data definition with optimum efficiency. LU-157381
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.



ebmpapst

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle

## Technical features

| | |
|---|---|
| **Mass** | 14.4 kg |
| **Size** | 500 mm |
| **Surface of rotor** | Coated in black |
| **Material of terminal box** | PP plastic |
| **Material of blades** | Press-fitted sheet steel blank, sprayed with PP plastic |
| **Housing material** | Die-cast aluminium, coated in black |
| **Material of wall ring** | Sheet steel, 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** | "F" |
| **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>- Operation and alarm display<br>- Alarm relay<br>- Integrated PID controller<br>- Output limit<br>- Motor current limit<br>- PFC, active<br>- RS485 MODBUS RTU<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Over-temperature protected electronics / motor<br>- Line undervoltage / phase failure detection |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 3.5 mA |
| **Electrical leads** | Via terminal box |
| **Motor protection** | Thermal overload protector (TOP) wired internally |
| **Protection class** | I (if protective earth is connected by customer at the connection point of the housing) |
| **Product conforming to standard** | EN 61800-5-1; CE |
| **Approval** | EAC |
| **Remark** | Standard conformity as per EN 60335-1 in preparation |



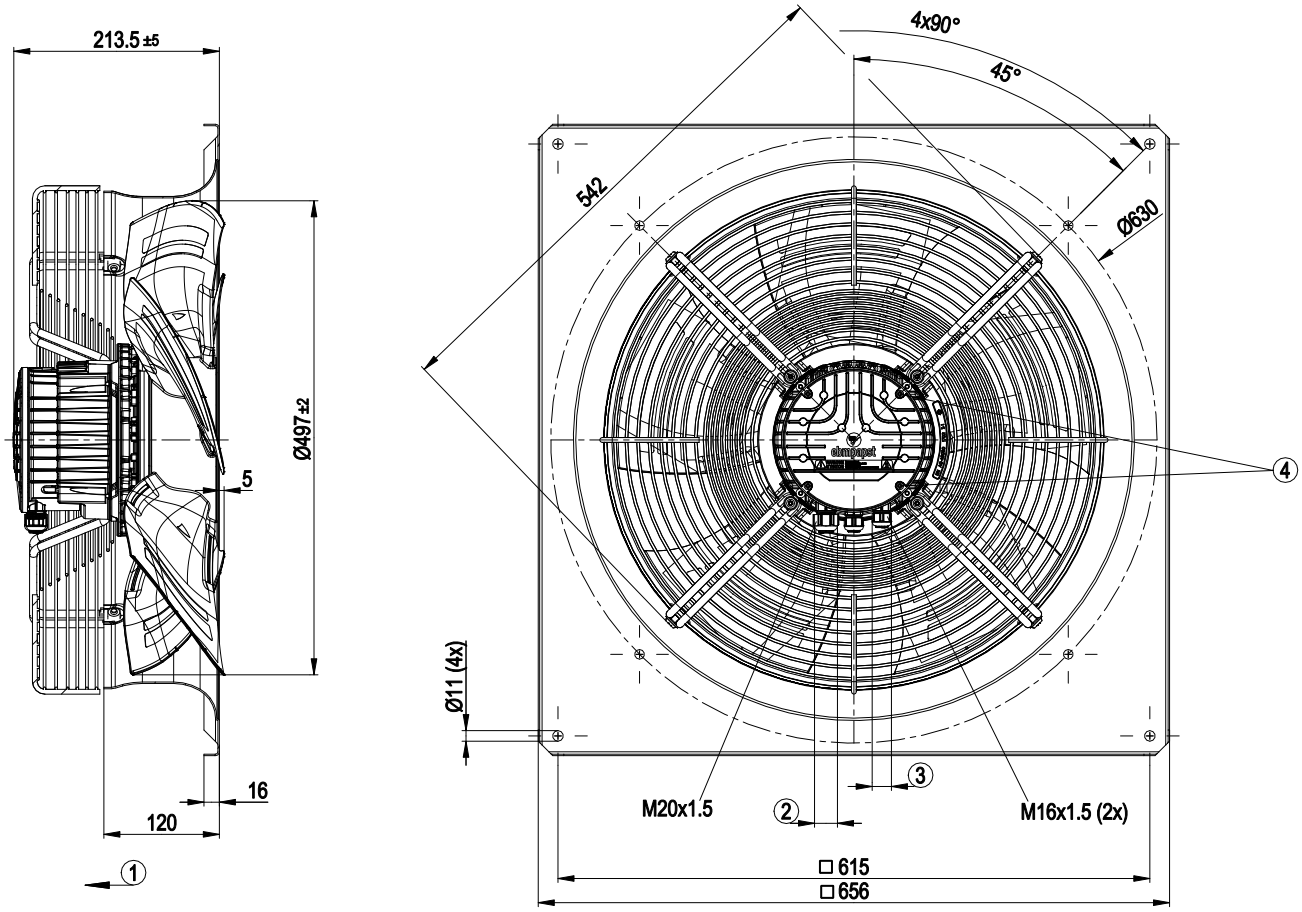
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle

## Product drawing




| | |
|---|---|
| 1 | Direction of air flow "V" |
| 2 | Cable diameter min. 8 mm, max. 12 mm, tightening torque 2.5±0.4 Nm |
| 3 | Cable diameter min. 6 mm, max. 10 mm, tightening torque 2.5±0,4 Nm<br>Cable diameter min. 4 mm, max. 7 mm, tightening torque 2.5±0.4 Nm (use must be made of sealing ring provided) |
| 4 | Tightening torque 1.5±0.2 Nm |



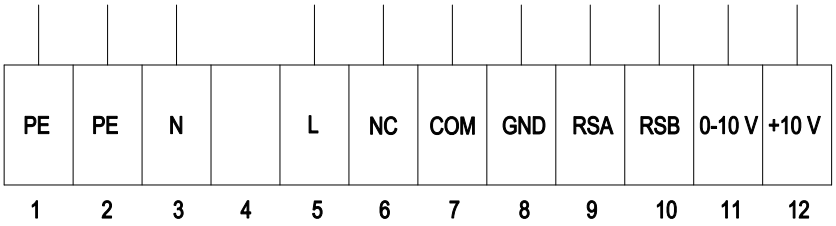
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle

## Connection screen




| No. | Conn. | Designation | Function / assignment |
|---|---|---|---|
| | 1 | PE | Protective earth |
| | 2 | PE | Protective earth |
| | 3 | N | Power supply, neutral conductor |
| | 4 | - | not used |
| | 5 | L | Power supply, phase |
| | 6 | NC | Status relay, floating status contact, break for failure, contact rating 250 VAC / 2 A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side |
| | 7 | COM | Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side |
| | 8 | GND | Signal ground for control interface, SELV |
| | 9 | RSA | RS-485 interface for MODBUS, RSA; SELV |
| | 10 | RSB | RS-485 interface for MODBUS, RSB; SELV |
| | 11 | 0-10 V | Analogue input (set value) SELV, 0-10 V, Ri=100kΩ, parametrisable curve |
| | 12 | +10 V | Fixed voltage output 10 VDC, SELV, +10 V ±3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometer) |



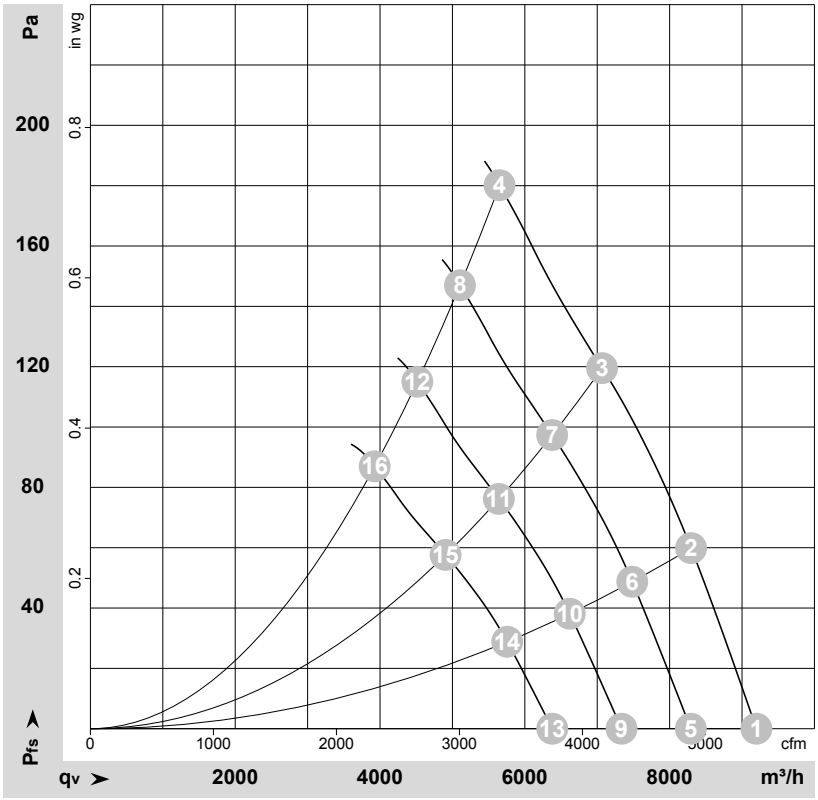
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle

## Charts: Air flow 50 Hz




ρ = 1,15 kg/m³ ± 2%

Measurement: LU-157381

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 | 1440 | 533 | 2.37 | 70 | 77 | 77 | 9200 | 0 |
| 2 | 230 | 50 | 1440 | 614 | 2.72 | 67 | 74 | 74 | 8295 | 60 |
| 3 | 230 | 50 | 1440 | 683 | 3.00 | 65 | 72 | 72 | 7065 | 120 |
| 4 | 230 | 50 | 1440 | 740 | 3.25 | 67 | 74 | 74 | 5650 | 180 |
| 5 | 230 | 50 | 1300 | 390 | 1.74 | 68 | 75 | 74 | 8295 | 0 |
| 6 | 230 | 50 | 1300 | 451 | 1.99 | 65 | 72 | 72 | 7485 | 49 |
| 7 | 230 | 50 | 1300 | 502 | 2.21 | 62 | 70 | 69 | 6380 | 97 |
| 8 | 230 | 50 | 1300 | 540 | 2.38 | 64 | 72 | 71 | 5105 | 147 |
| 9 | 230 | 50 | 1150 | 270 | 1.20 | 65 | 72 | 71 | 7335 | 0 |
| 10 | 230 | 50 | 1150 | 312 | 1.38 | 62 | 69 | 69 | 6620 | 38 |
| 11 | 230 | 50 | 1150 | 347 | 1.53 | 59 | 66 | 66 | 5640 | 76 |
| 12 | 230 | 50 | 1150 | 374 | 1.65 | 61 | 69 | 68 | 4515 | 115 |
| 13 | 230 | 50 | 1000 | 178 | 0.79 | 61 | 68 | 68 | 6380 | 0 |
| 14 | 230 | 50 | 1000 | 205 | 0.91 | 58 | 65 | 65 | 5755 | 29 |
| 15 | 230 | 50 | 1000 | 228 | 1.00 | 56 | 63 | 63 | 4905 | 58 |
| 16 | 230 | 50 | 1000 | 246 | 1.08 | 58 | 65 | 65 | 3925 | 87 |

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



ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com