**S3G450-AO02-52**

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for short 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
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **S3G450-AO02-52** |
| **Motor** | **M3G074-DF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed (rpm) | $min^{-1}$ | 980 |
| Power consumption | W | 163 |
| Current draw | A | 1.34 |
| Max. back pressure | Pa | 74 |
| Max. back pressure | inH2O | 0.3 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 60 |

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

## Data according to ErP Directive

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 39.8 | 28.6 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 51.2 | 40 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_{ed}$ | kW | 0.16 |
| 09 Air flow $q_v$ | $m^3/h$ | 3505 |
| 09 Pressure increase $p_{fs}$ | Pa | 61 |
| 10 Speed (rpm) n | $min^{-1}$ | 1000 |
| 11 Specific ratio* | | 1.00 |

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

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

LU-138244

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for short nozzle

## Technical description

| | |
|---|---|
| **Weight** | 4.9 kg |
| **Fan size** | 450 mm |
| **Terminal box material** | ABS plastic |
| **Blade material** | Press-fitted sheet steel blank, sprayed with PP plastic |
| **Guard grille material** | Steel, coated with black plastic (RAL 9005) |
| **Number of blades** | 5 |
| **Airflow direction** | "V" |
| **Direction of rotation** | Counterclockwise, viewed toward rotor |
| **Degree of protection** | IP54 |
| **Insulation class** | "B" |
| **Moisture (F) / Environmental (H) protection class** | F3-1 |
| **Max. permitted ambient temp. for motor (transport/storage)** | + 80 °C |
| **Min. permitted ambient temp. for motor (transport/storage)** | - 40 °C |
| **Installation position** | Any |
| **Condensation drainage holes** | None, open rotor |
| **Cooling hole/opening** | On rotor side |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 10 mA<br>- Tach output<br>- Power limiter<br>- Motor current limitation<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Overvoltage detection<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage detection |
| **Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)** | <= 3.5 mA |
| **Electrical hookup** | Via terminal box |
| **Motor protection** | PTC thermistor |
| **With cable** | Variable |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 60335-1; CE |
| **Approval** | CCC |



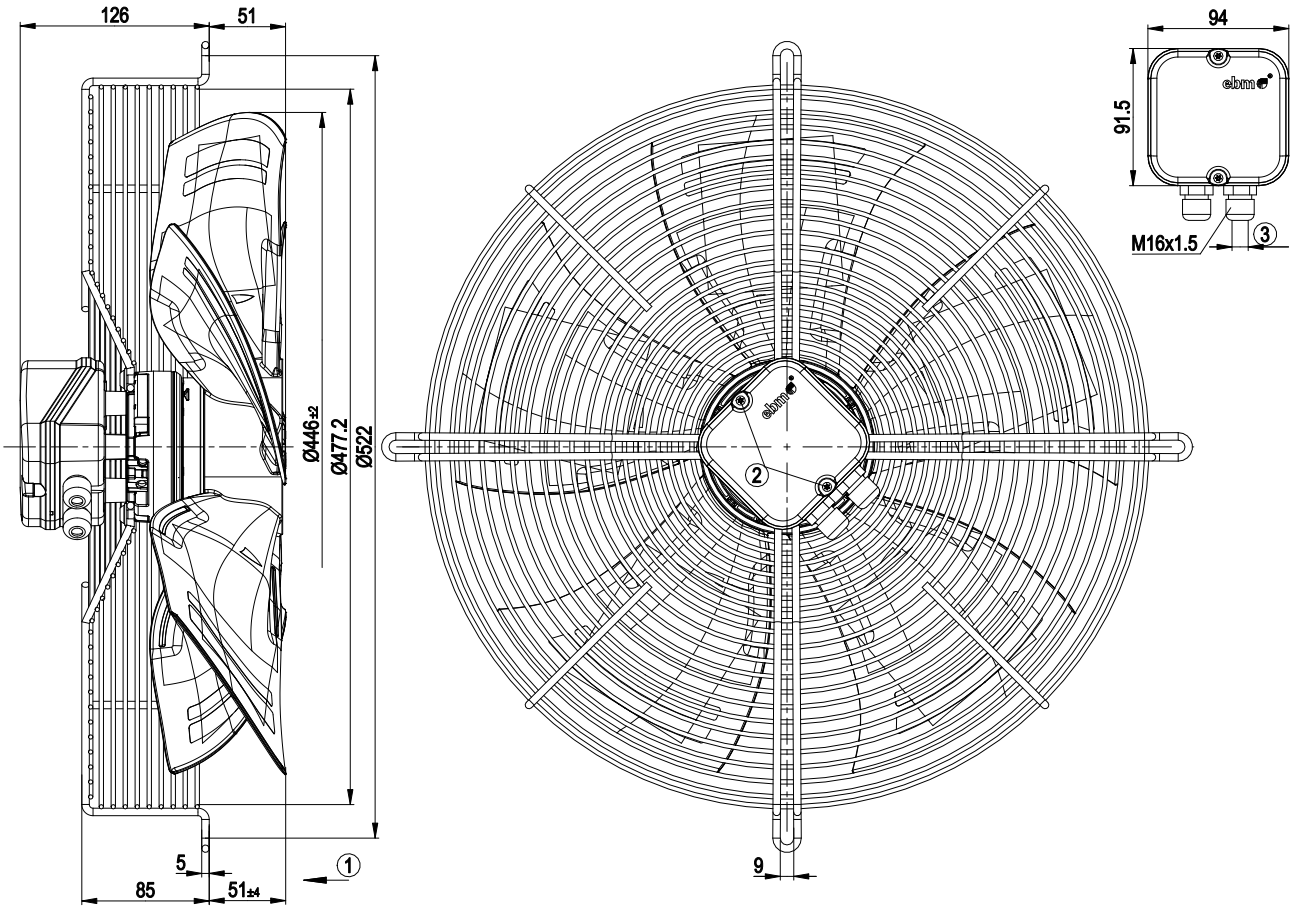
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for short nozzle

## Product drawing




| | |
|---|---|
| 1 | Direction of air flow "V" |
| 2 | Tightening torque 0.5 ± 0.1 Nm |
| 3 | Cable diameter max. 7.5 mm, tightening torque 1.3 ± 0.2 Nm |



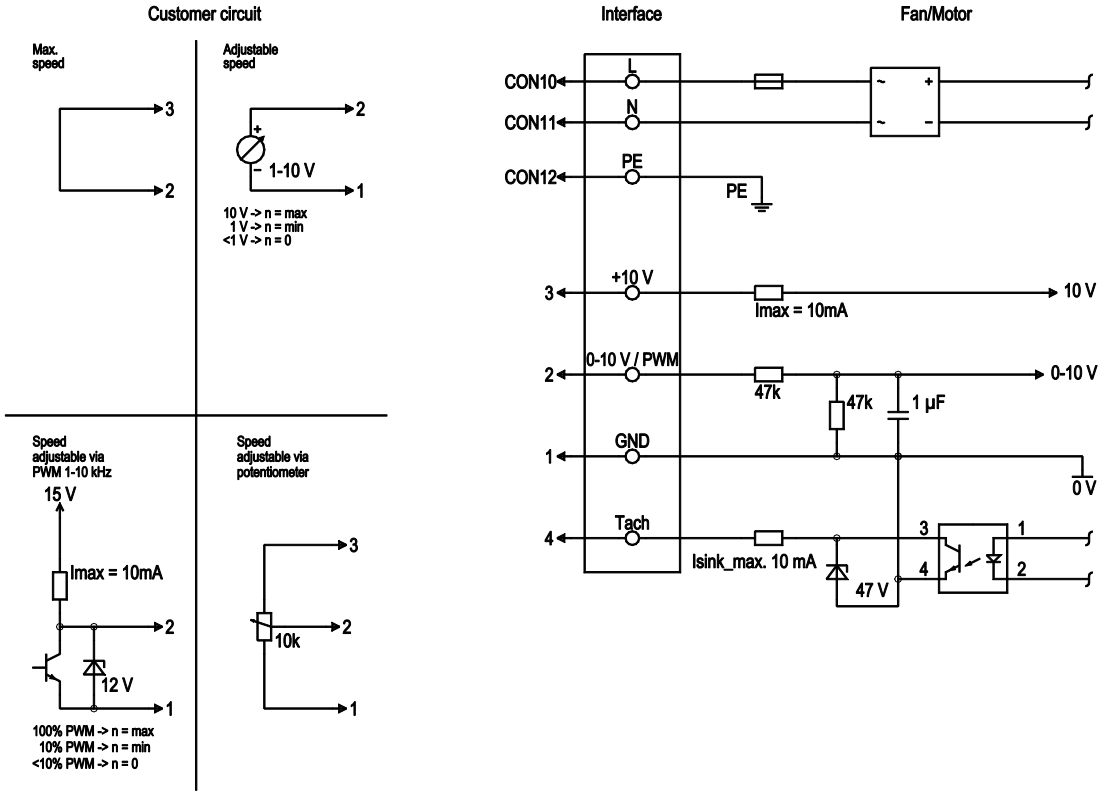
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for short nozzle

## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| | CON10 | L | black | Supply connection, power supply, phase, see nameplate for voltage range |
| | CON11 | N | blue | Supply connection, power supply, neutral conductor, see nameplate for voltage range |
| | CON12 | PE | green/yellow | Ground connection |
| | 2 | 0- 10V PWM | yellow | 0-10 V / PWM control input, Ri=100 kΩ, SELV |
| | 4 | Tach | white | Tach output, open collector, 1 pulse per revolution, Isink max = 10 mA, SELV |
| | 3 | +10 V | red | Fixed voltage output 10 VDC +/-3 %, Imax. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. pot), SELV |
| | 1 | GND | blue | Reference ground for control interface, SELV |



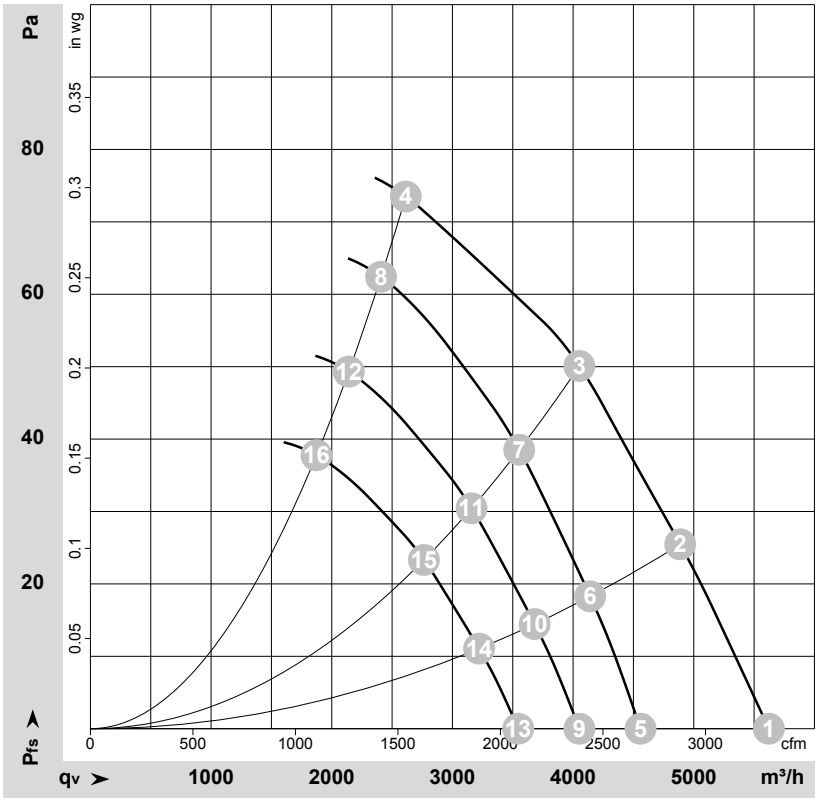
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickle-shaped blades (S series)

with guard grille for short nozzle

## Curves: Air performance 50 Hz




ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-138244-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Measured values

| | U | f | n | $P_{ed}$ | I | $LpA_{in}$ | $LwA_{in}$ | qv | $p_{fs}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | dB(A) | dB(A) | $m^3/h$ | Pa | CFM | inH2O |
| 1 | 230 | 50 | 1110 | 163 | 1.34 | 59 | 66 | 5620 | 0 | 3310 | 0.00 |
| 2 | 230 | 50 | 1060 | 163 | 1.34 | 57 | 64 | 4890 | 25 | 2875 | 0.10 |
| 3 | 230 | 50 | 1025 | 163 | 1.34 | 54 | 61 | 4050 | 50 | 2385 | 0.20 |
| 4 | 230 | 50 | 980 | 163 | 1.34 | 61 | 68 | 2615 | 74 | 1540 | 0.30 |
| 5 | 230 | 50 | 900 | 89 | 0.72 | 54 | 60 | 4560 | 0 | 2685 | 0.00 |
| 6 | 230 | 50 | 900 | 102 | 0.83 | 53 | 60 | 4140 | 18 | 2435 | 0.07 |
| 7 | 230 | 50 | 900 | 113 | 0.93 | 51 | 58 | 3555 | 39 | 2090 | 0.16 |
| 8 | 230 | 50 | 900 | 131 | 1.09 | 59 | 66 | 2410 | 63 | 1415 | 0.25 |
| 9 | 230 | 50 | 800 | 63 | 0.51 | 51 | 57 | 4050 | 0 | 2385 | 0.00 |
| 10 | 230 | 50 | 800 | 72 | 0.58 | 50 | 57 | 3680 | 14 | 2165 | 0.06 |
| 11 | 230 | 50 | 800 | 80 | 0.65 | 48 | 55 | 3160 | 31 | 1860 | 0.12 |
| 12 | 230 | 50 | 800 | 92 | 0.76 | 56 | 63 | 2140 | 49 | 1260 | 0.20 |
| 13 | 230 | 50 | 700 | 42 | 0.34 | 48 | 54 | 3545 | 0 | 2085 | 0.00 |
| 14 | 230 | 50 | 700 | 48 | 0.39 | 47 | 53 | 3220 | 11 | 1895 | 0.04 |
| 15 | 230 | 50 | 700 | 53 | 0.44 | 45 | 51 | 2765 | 23 | 1625 | 0.09 |
| 16 | 230 | 50 | 700 | 62 | 0.51 | 52 | 60 | 1875 | 38 | 1100 | 0.15 |

U = Power supply · f = Frequency · n = Speed (rpm) · $P_{ed}$ = Power consumption · I = Current draw · $LpA_{in}$ = Sound pressure level intake side · $LwA_{in}$ = Sound power level intake 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