**W3G910-HG02-51**

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle with AxiTop diffuser

**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

## Nominal data

| | |
|---|---|
| **Type** | **W3G910-HG02-51** |
| **Motor** | **M3G112-IA** |

| | | |
|---|---|---|
| Phase | | 3~ |
| Nominal voltage | VAC | 400 |
| Nominal voltage range | VAC | 380 .. 480 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed (rpm) | $min^{-1}$ | 640 |
| Power input | W | 700 |
| Current draw | A | 1.1 |
| Max. back pressure | Pa | 85 |
| 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 $\eta_{es}$ | % | 50.1 | 32.5 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 57.6 | 40 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power input $P_{ed}$ | kW | 0.66 |
| 09 Air flow $q_v$ | $m^3/h$ | 14995 |
| 09 Pressure increase $p_{fs}$ | Pa | 73 |
| 10 Speed (rpm) n | $min^{-1}$ | 640 |
| 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-171112

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle with AxiTop diffuser

## Technical features

| | |
|---|---|
| **Mass** | 38 kg |
| **Size** | 910 mm |
| **Surface of rotor** | Coated in black |
| **Material of terminal box** | PC plastic |
| **Material of electronics housing** | Die-cast aluminium, coated in black |
| **Material of blades** | Press-fitted sheet steel blank, sprayed with PP plastic |
| **Material of mounting ring** | Steel, coated in black plastic (RAL 9005) |
| **Material of wall ring** | Sheet steel, galvanised and coated in black plastic (RAL 9005) |
| **Material of guard grille** | Steel, coated in black plastic (RAL9005) |
| **Material of outer diffuser** | PP plastic |
| **Material of inner diffuser including lid** | PP plastic |
| **Number of blades** | 5 |
| **Direction of air flow** | "V" |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | IP 55 |
| **Insulation class** | "F" |
| **Humidity (F)/environmental protection class (H)** | H2 |
| **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>- External 24 V input (programming)<br>- Alarm relay<br>- Integrated PID controller<br>- Output limit<br>- Motor current limit<br>- PFC, passive<br>- RS485 MODBUS RTU<br>- Soft start<br>-Maximum EEPROM write cycles 100,000<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Temperature derating<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 61000-6-3 (household environment) |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 3.5 mA |



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 with AxiTop diffuser

| | |
|---|---|
| **Electrical leads** | Via terminal box |
| **Motor protection** | Thermal overload protector (TOP) wired internally |
| **Protection class** | I (if protective earth is connected by customer) |
| **Product conforming to standard** | EN 61800-5-1; CE |
| **Approval** | EAC |
| **Remark** | Standard conformity as per EN 60335-1 in preparation |



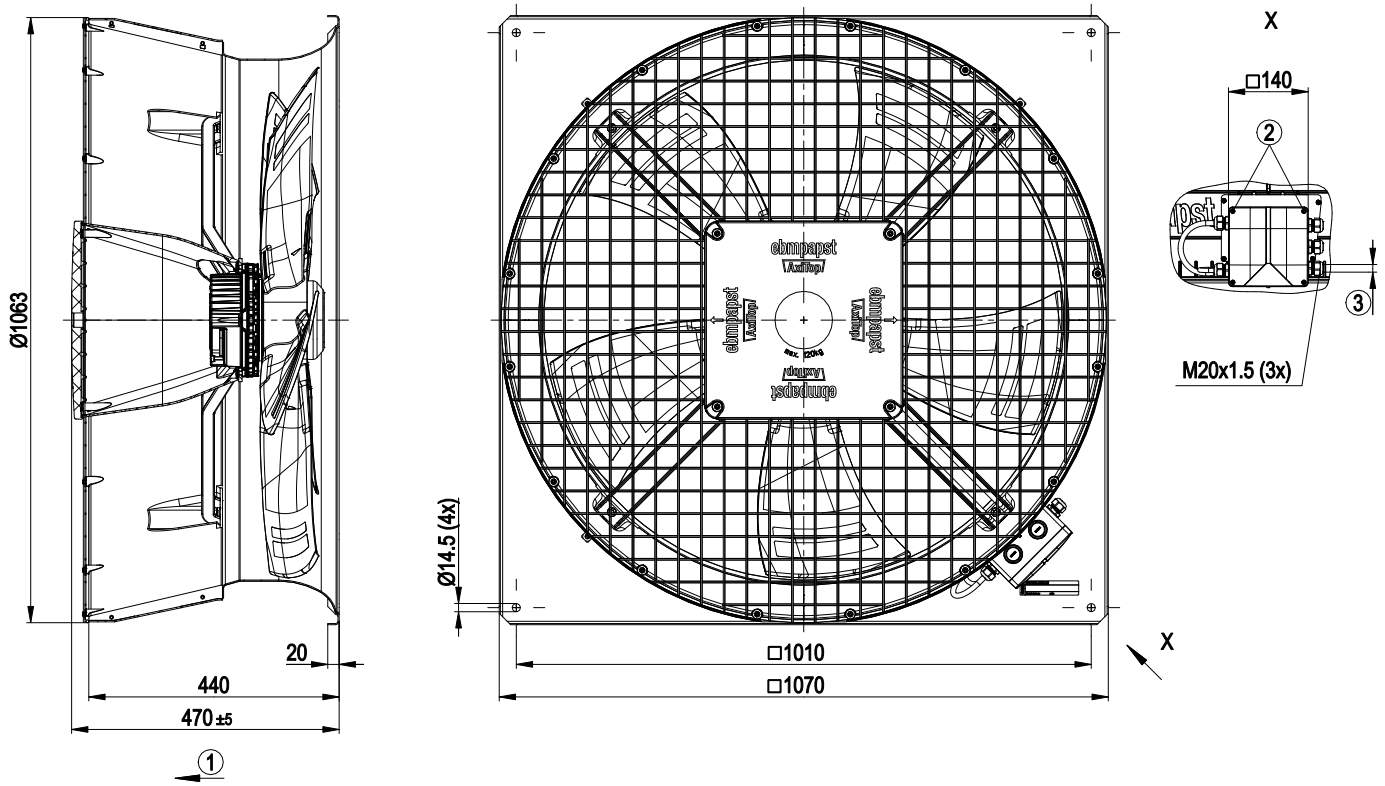
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle with AxiTop diffuser

## Product drawing




| | |
|---|---|
| 1 | Direction of air flow "V" |
| 2 | Tightening torque 1.7±0.2 Nm |
| 3 | Cable diameter min. 6 mm, max. 12 mm, tightening torque 4±0.6 Nm |



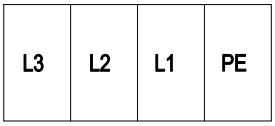
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

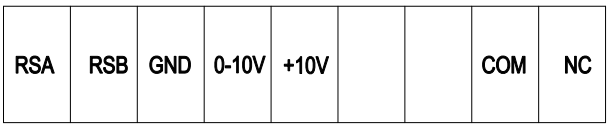
sickled blades (S series)

with full square nozzle with AxiTop diffuser

## Connection screen




KL 1




KL 2

| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| KL 1 | | L3 | black | Mains connection, power supply 3-phase 380-480 VAC; 50/60 Hz |
| KL 1 | | L2 | black | Mains connection, power supply 3-phase 380-480 VAC; 50/60 Hz |
| KL 1 | | L1 | black | Mains connection, power supply 3-phase 380-480 VAC; 50/60 Hz |
| KL 1 | | PE | green/yellow | Earth connection, PE connection |
| KL 2 | | RSA | white | Bus connection RS-485, RSA, MODBUS RTU; SELV |
| KL 2 | | RSB | brown | Bus connection RS-485, RSB, MODBUS RTU; SELV |
| KL 2 | | GND | blue | Reference earth for control interface; SELV |
| KL 2 | | 0-10 V | yellow | Control/current sensor value input 0-10 VDC, impedance 100 kΩ, use only as alternative to 4-20 mA input; SELV |
| KL 2 | | +10 V | red | Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer); SELV |
| KL2 | | | - | not used |
| KL2 | | | - | not used |
| KL2 | | COM | white 2 | Alarm relay, Common (2 A, 250 VAC, AC1) |
| KL2 | | NC | white 1 | Alarm relay, break for failure |



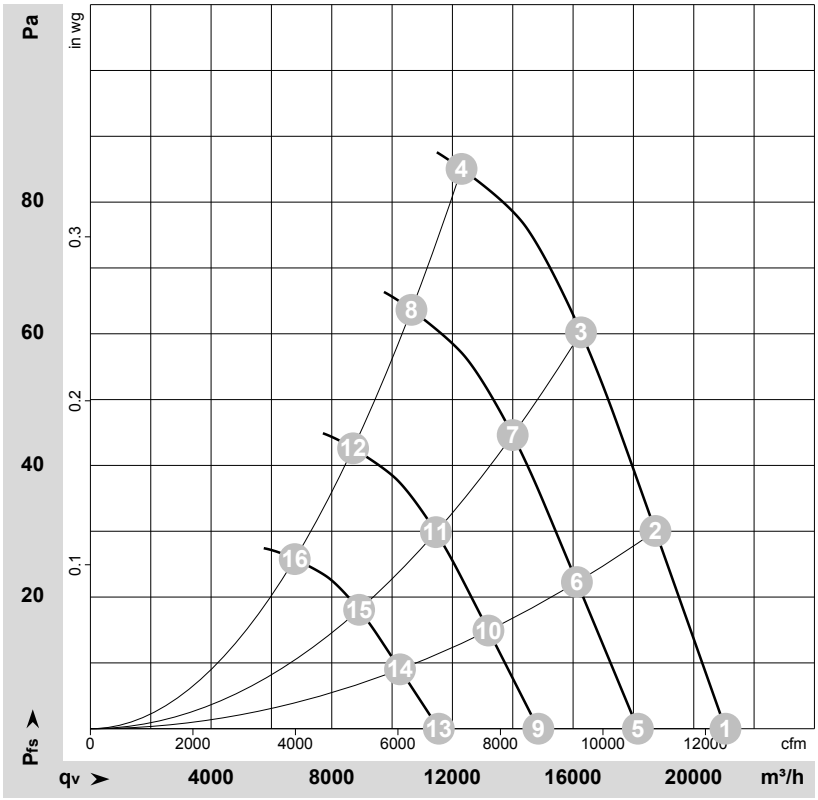
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC axial fan - HyBlade

sickled blades (S series)

with full square nozzle with AxiTop diffuser

## Charts: Air flow 50 Hz




ρ = 1.178 kg/m³ ± 2 %

Measurement: LU-171112-1

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 | 400 | 50 | 640 | 436 | 0.71 | 62 | 69 | 69 | 21050 | 0 | 12390 | 0.00 |
| 2 | 400 | 50 | 640 | 538 | 0.86 | 60 | 67 | 67 | 18730 | 30 | 11025 | 0.12 |
| 3 | 400 | 50 | 640 | 629 | 0.99 | 59 | 66 | 66 | 16265 | 60 | 9570 | 0.24 |
| 4 | 400 | 50 | 640 | 700 | 1.10 | 66 | 74 | 74 | 12305 | 85 | 7240 | 0.34 |
| 5 | 400 | 50 | 550 | 279 | 0.45 | 59 | 66 | 65 | 18150 | 0 | 10680 | 0.00 |
| 6 | 400 | 50 | 550 | 343 | 0.55 | 56 | 64 | 63 | 16125 | 22 | 9490 | 0.09 |
| 7 | 400 | 50 | 550 | 401 | 0.63 | 55 | 63 | 63 | 14000 | 45 | 8240 | 0.18 |
| 8 | 400 | 50 | 550 | 448 | 0.70 | 62 | 70 | 71 | 10640 | 64 | 6265 | 0.26 |
| 9 | 400 | 50 | 450 | 153 | 0.25 | 53 | 61 | 60 | 14850 | 0 | 8740 | 0.00 |
| 10 | 400 | 50 | 450 | 188 | 0.30 | 51 | 58 | 58 | 13195 | 15 | 7765 | 0.06 |
| 11 | 400 | 50 | 450 | 220 | 0.35 | 50 | 57 | 58 | 11455 | 30 | 6740 | 0.12 |
| 12 | 400 | 50 | 450 | 245 | 0.38 | 57 | 65 | 65 | 8705 | 43 | 5125 | 0.17 |
| 13 | 400 | 50 | 350 | 72 | 0.12 | 47 | 54 | 54 | 11550 | 0 | 6795 | 0.00 |
| 14 | 400 | 50 | 350 | 88 | 0.14 | 45 | 52 | 52 | 10260 | 9 | 6040 | 0.04 |
| 15 | 400 | 50 | 350 | 103 | 0.16 | 43 | 51 | 51 | 8910 | 18 | 5245 | 0.07 |
| 16 | 400 | 50 | 350 | 115 | 0.18 | 51 | 59 | 59 | 6770 | 26 | 3985 | 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



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