

# AC axial fan - HyBlade

sickle-shaped blades (S series)

Fan housing with guard grille, Transformer fan

W6D910-DA01-82 ebmpapst Datasheet

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Limited partnership · Headquarters Muldingen

Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Muldingen GmbH · Headquarters Muldingen

Amtsgericht (court of registration) Stuttgart · HRB 590142



## Nominal data

|                             |                   |      |      |
|-----------------------------|-------------------|------|------|
| Type                        | W6D910-DA01-82    |      |      |
| Motor                       | M6D138-NA         |      |      |
| Phase                       |                   | 3~   | 3~   |
| Nominal voltage             | VAC               | 400  | 400  |
| Wiring                      |                   | Δ    | Y    |
| Frequency                   | Hz                | 50   | 50   |
| Method of obtaining data    |                   | fa   | fa   |
| Valid for approval/standard |                   | CE   | CE   |
| Speed                       | min <sup>-1</sup> | 920  | 740  |
| Power consumption           | W                 | 2050 | 1420 |
| Current draw                | A                 | 4.67 | 2.63 |
| Max. back pressure          | Pa                | 120  | 70   |
| Min. ambient temperature    | °C                | -40  | -40  |
| Max. ambient temperature    | °C                | 50   | 50   |
| Starting current            | A                 | 18.6 | 6.2  |

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 $\eta_{es}$ | % | 36.1   | 36.1      | 09 Power consumption $P_e$    | kW                | 2.46  |
| 02 Measurement category           |   | A      |           | 09 Air flow $q_v$             | m <sup>3</sup> /h | 21770 |
| 03 Efficiency category            |   | Static |           | 09 Pressure increase $p_{fs}$ | Pa                | 142   |
| 04 Efficiency grade N             |   | 40     | 40        | 10 Speed n                    | min <sup>-1</sup> | 890   |
| 05 Variable speed drive           |   | No     |           | 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 =  $1 + p_g / 100\,000\text{ Pa}$

LU-136151



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## Technical description

|  |   |
|--|---|
| Weight   | 55.3 kg   |
| Fan size   | 910 mm  |
| Rotor surface  | Painted black   |
| Terminal box material  | Die-cast aluminum, painted black                                    |
| Blade material   | Sheet aluminum insert (painted black), sprayed with PP plastic      |
| Fan housing material   | Sheet steel, galvanized and coated with telegray plastic (RAL 7047) |
| Guard grille material  | Steel, galvanized and coated with telegray plastic (RAL 7047)       |
| Number of blades   | 5   |
| Blade pitch  | 0°  |
| Airflow direction  | "A"   |
| Direction of rotation  | Counterclockwise, viewed toward rotor                               |
| Degree of protection   | IP54  |
| Insulation class   | "F"   |
| Moisture (F) / Environmental (H) protection class                          | H2+   |
| 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  | On rotor and stator sides   |
| Mode   | S1  |
| Motor bearing  | Ball bearing  |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | <= 3.5 mA   |
| Electrical hookup  | Via terminal box  |
| Motor protection   | Thermal overload protector (TOP) with basic insulation              |
| With cable   | Axial   |
| Protection class   | I (with customer connection of protective earth)                    |
| Conformity with standards  | EN 60034-1 (2010); EN 61800-5-1; CE                                 |
| Approval   | EAC; VDE  |

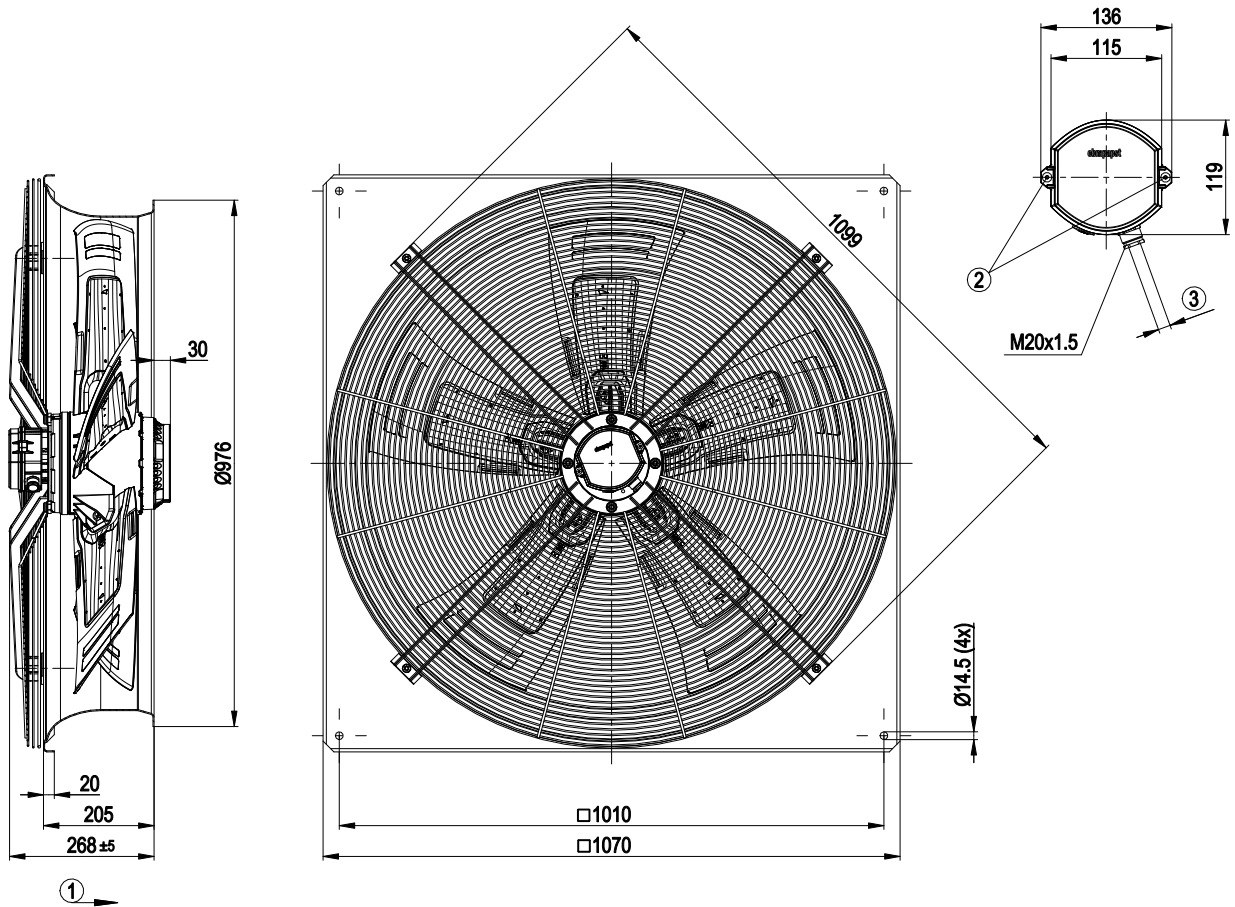


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## Product drawing



|   |  |
|---|--|
| 1 | Direction of air flow "A"  |
| 2 | Tightening torque $2.5 \pm 0.4$ Nm                                       |
| 3 | Cable diameter: min. 10 mm, max. 12 mm, tightening torque $4 \pm 0.6$ Nm |

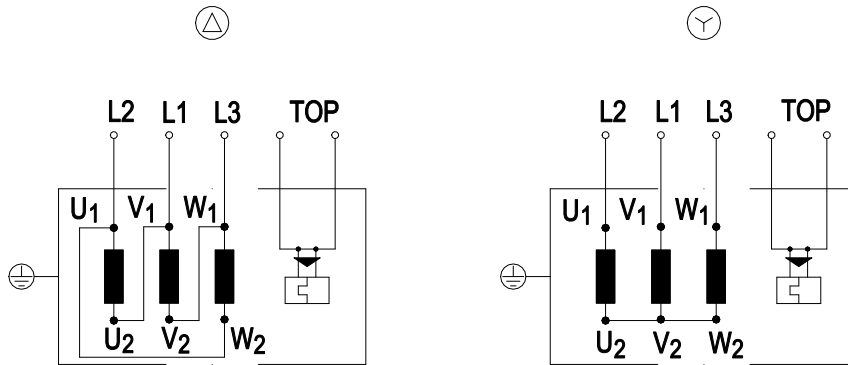


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## Connection diagram



Change of rotation direction by reversing two phases

|    |                  |    |                 |     |              |
|----|------------------|----|-----------------|-----|--------------|
| Δ  | Delta connection | Y  | Star connection | L2  | = U1 = black |
| L1 | = V1 = blue      | L3 | = W1 = brown    | W2  | yellow       |
| U2 | green            | V2 | white           | TOP | 2x gray      |
| PE | green/yellow     |    |                 |     |              |

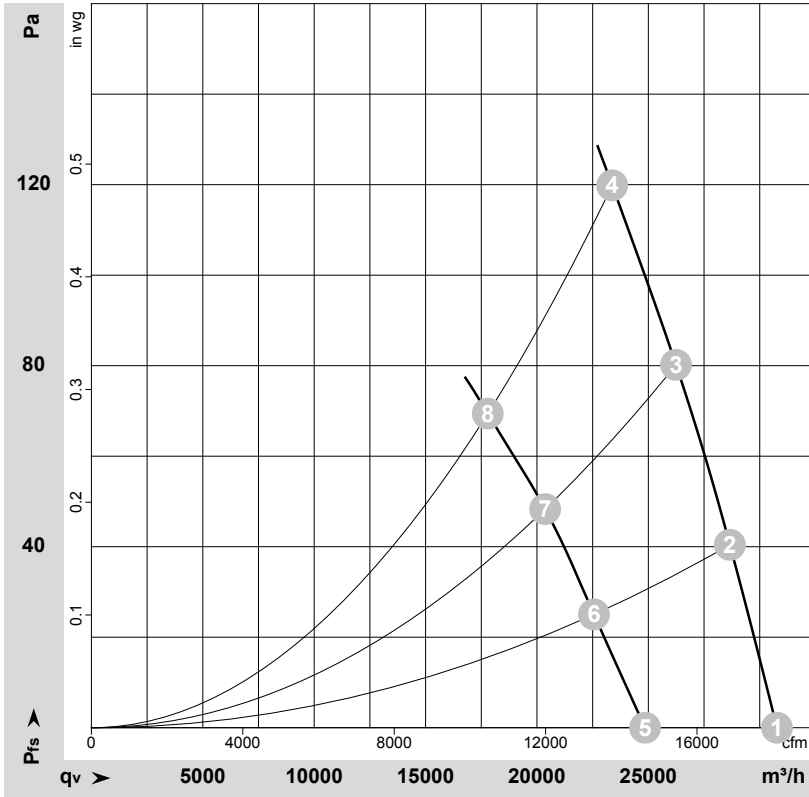


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## Curves: Air performance 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-174355-1  
Measurement: LU-174490-1

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

|   | Wired  | U   | f  | n                 | P <sub>e</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 | Δ      | 400 | 50 | 920               | 2050           | 4.67 | 74                | 83                | 85                 | 30775             | 0               |
| 2 | Δ      | 400 | 50 | 915               | 2182           | 4.91 | 74                | 83                | 84                 | 28660             | 40              |
| 3 | Δ      | 400 | 50 | 905               | 2312           | 5.07 | 73                | 81                | 82                 | 26240             | 80              |
| 4 | Δ      | 400 | 50 | 900               | 2445           | 5.24 | 71                | 80                | 81                 | 23375             | 120             |
| 5 | Y. AUS | 400 | 50 | 740               | 1420           | 2.63 | 68                | 78                | 78                 | 24855             | 0               |
| 6 | Y. AUS | 400 | 50 | 715               | 1475           | 2.78 | 66                | 76                | 76                 | 22560             | 25              |
| 7 | Y. AUS | 400 | 50 | 705               | 1534           | 2.91 | 65                | 75                | 75                 | 20365             | 50              |
| 8 | Y. AUS | 400 | 50 | 685               | 1578           | 3.00 | 64                | 74                | 73                 | 17790             | 70              |

Wired = Wiring · U = Power supply · f = Frequency · n = Speed · P<sub>e</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
LwA<sub>out</sub> = Sound power level outlet side · qv = Air flow · p<sub>fs</sub> = Pressure increase

