

W1G230-EB91-22

# EC axial fan - ESM

sickle-shaped blades (S series), single-intake  
ESM fan housing



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## Nominal data

|                          |                   |       |       |
|--------------------------|-------------------|-------|-------|
| Type                     | W1G230-EB91-22    |       |       |
| Motor                    | M1G055-BD         |       |       |
| Phase                    |                   | 1~    | 1~    |
| Nominal voltage          | VAC               | 230   | 230   |
| Frequency                | Hz                | 50/60 | 50/60 |
| Method of obtaining data |                   | ml    |       |
| Speed (rpm)              | min <sup>-1</sup> | 1600  | 1000  |
| Power consumption        | W                 | 32    |       |
| Current draw             | A                 | 0.3   |       |
| Max. back pressure       | Pa                | 45    |       |
| Max. back pressure       | in. wg            | 0.18  |       |
| Min. ambient temperature | °C                | -30   | -30   |
| Max. ambient temperature | °C                | 50    | 50    |

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



## Technical description

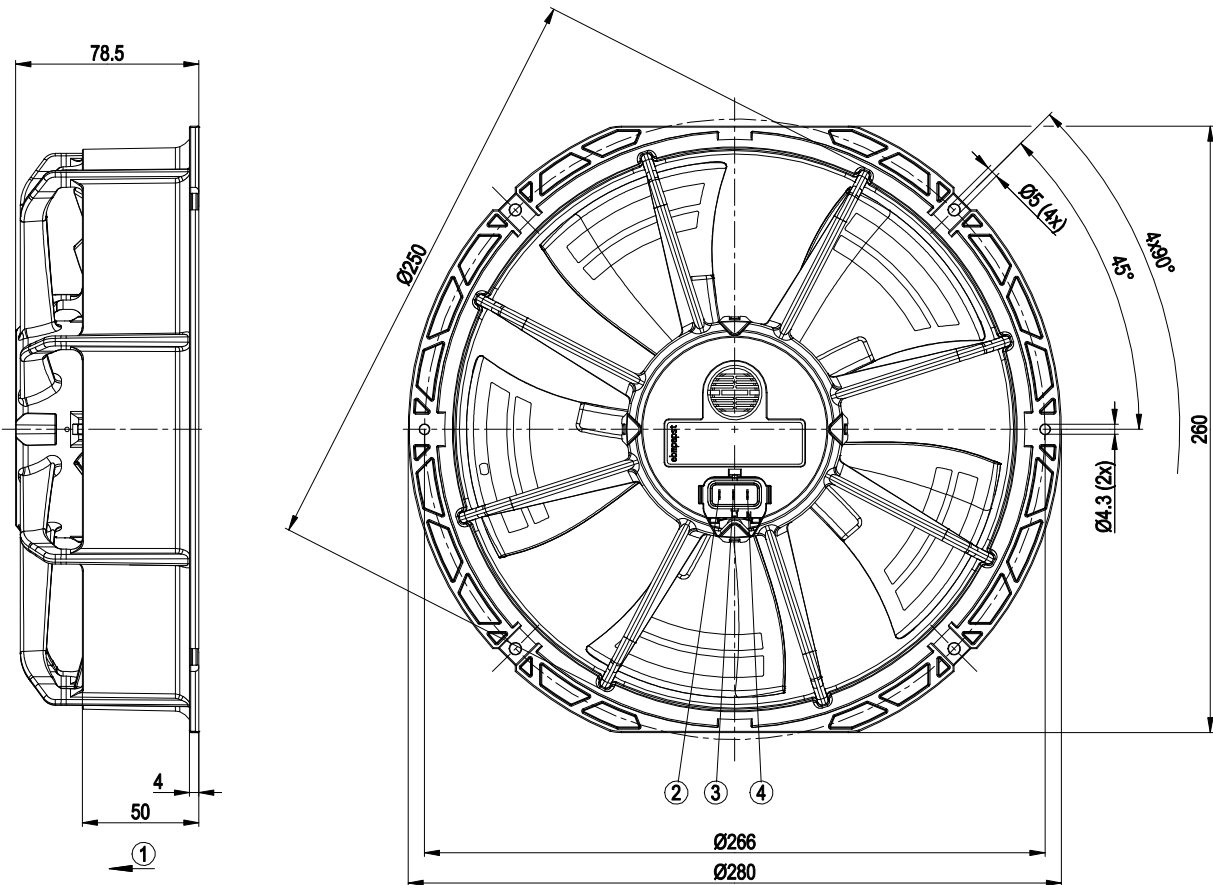
|                                                                             |                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                                      | 1.0 kg                                                                                                                                                                                                                                                                                                                                            |
| Size                                                                        | 230 mm                                                                                                                                                                                                                                                                                                                                            |
| Motor size                                                                  | 55                                                                                                                                                                                                                                                                                                                                                |
| Blade material                                                              | PA plastic                                                                                                                                                                                                                                                                                                                                        |
| Fan housing material                                                        | PP plastic                                                                                                                                                                                                                                                                                                                                        |
| Number of blades                                                            | 5                                                                                                                                                                                                                                                                                                                                                 |
| Airflow direction                                                           | V                                                                                                                                                                                                                                                                                                                                                 |
| Direction of rotation                                                       | Counterclockwise, viewed toward rotor                                                                                                                                                                                                                                                                                                             |
| Degree of protection                                                        | IP55; only with suitable plug, to be installed by customer                                                                                                                                                                                                                                                                                        |
| Insulation class                                                            | "B"                                                                                                                                                                                                                                                                                                                                               |
| Moisture (F) / Environmental (H) protection class                           | H1+                                                                                                                                                                                                                                                                                                                                               |
| 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                                                                                                                                                                                                                                                                                                                                              |
| Mode                                                                        | S1                                                                                                                                                                                                                                                                                                                                                |
| Motor bearing                                                               | Ball bearing                                                                                                                                                                                                                                                                                                                                      |
| Technical features                                                          | <ul style="list-style-type: none"> <li>- Speed setting input (230 V)</li> <li>- ESM+ expandable with plug-in module</li> <li>- Soft start</li> <li>- Thermal overload protection for motor</li> </ul>                                                                                                                                             |
| Speed levels                                                                | 2                                                                                                                                                                                                                                                                                                                                                 |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)  | <= 0.25 mA                                                                                                                                                                                                                                                                                                                                        |
| Electrical hookup                                                           | Plug                                                                                                                                                                                                                                                                                                                                              |
| Motor protection                                                            | Thermal switch auto reset, internally connected                                                                                                                                                                                                                                                                                                   |
| Protection class assignment                                                 | <p>II; This component for installation may have several local protection classes. This information relates to this component's basic design.</p> <p>The final protection class is based on the component's intended installation and connection. If there is a PE connection point on the housing, it must not be visible after installation.</p> |
| Safety class of the permissible refrigerants according to EN378 / ISO5149-1 | A3/B3                                                                                                                                                                                                                                                                                                                                             |
| Maximum surface temperature                                                 | 225 °C                                                                                                                                                                                                                                                                                                                                            |
| Conformity with standards                                                   | EN 60034-1; EN 60204-1; EN 60335-1; EN 60335-2-24; EN 60335-2-80; EN 60335-2-89; CE                                                                                                                                                                                                                                                               |
| Comment on CE                                                               | Ecodesign Directive 2009/125/EC + Fan Directive (EC) No. 327/2011 does not apply, as power consumption <125W.                                                                                                                                                                                                                                     |
| Approval                                                                    | UL 1004-3; EAC; CSA C22.2 No. 77; VDE                                                                                                                                                                                                                                                                                                             |



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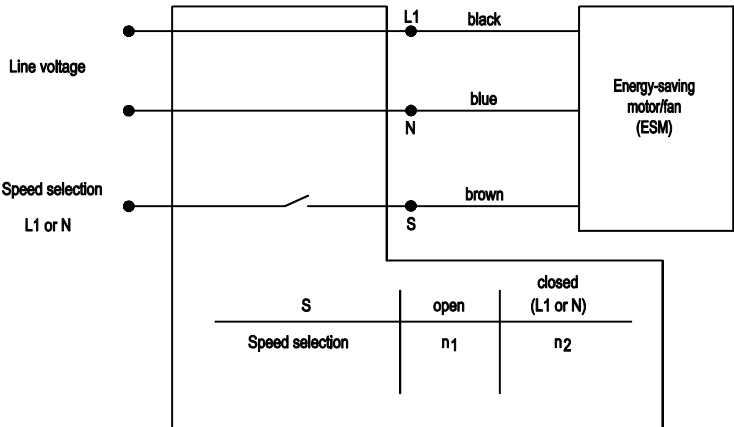
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## Product drawing

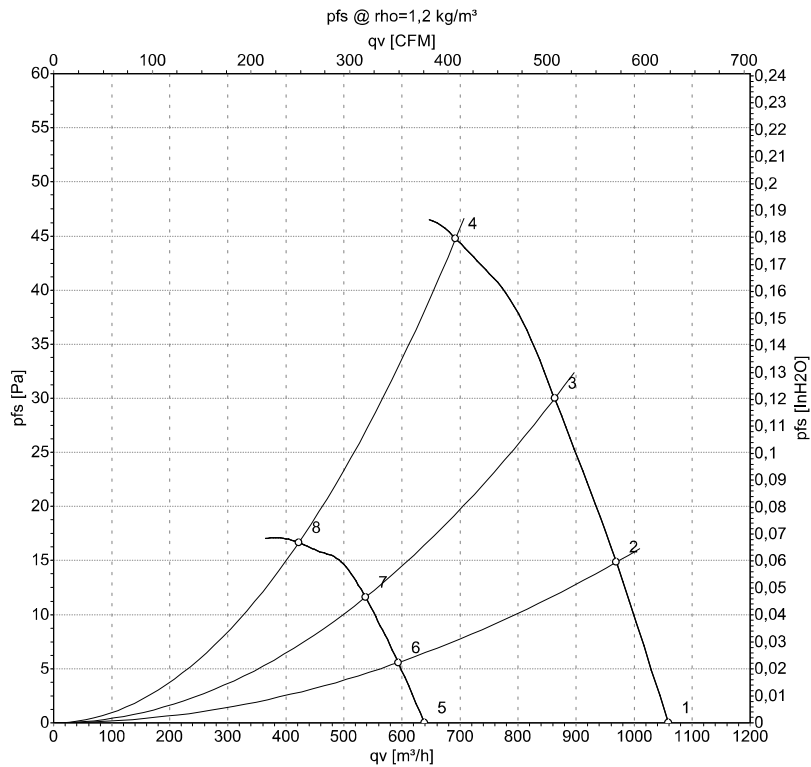


|   |                                                |
|---|------------------------------------------------|
| 1 | Direction of air flow "V"                      |
| 2 | Pin S, speed selection (flat plug 2.8 x 0.5)   |
| 3 | Pin L1, phase (flat plug 2.8 x 0.5)            |
| 4 | Pin N, neutral conductor (flat plug 2.8 x 0.5) |

## Connection diagram



## Curves: Air performance 50 Hz

Measurement: LU-152684-1  
Measurement: LU-152688-1

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 <sub>ed</sub> | I    | q <sub>v</sub> | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub> |
|---|-----|----|-------------------|-----------------|------|----------------|-----------------|----------------|-----------------|
|   | V   | Hz | min <sup>-1</sup> | W               | A    | m³/h           | Pa              | cfm            | in. wg          |
| 1 | 230 | 50 | 1600              | 29              | 0.25 | 1060           | 0               | 625            | 0.00            |
| 2 | 230 | 50 | 1600              | 31              | 0.26 | 970            | 15              | 570            | 0.06            |
| 3 | 230 | 50 | 1600              | 32              | 0.28 | 865            | 30              | 510            | 0.12            |
| 4 | 230 | 50 | 1600              | 32              | 0.30 | 690            | 45              | 405            | 0.18            |
| 5 | 230 | 50 | 1000              | 8.0             | 0.07 | 640            | 0               | 375            | 0.00            |
| 6 | 230 | 50 | 1000              | 8.0             | 0.08 | 595            | 6               | 350            | 0.02            |
| 7 | 230 | 50 | 1000              | 9.0             | 0.08 | 535            | 12              | 315            | 0.05            |
| 8 | 230 | 50 | 1000              | 9.0             | 0.08 | 420            | 17              | 250            | 0.07            |

U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · q<sub>v</sub> = Air flow · p<sub>fs</sub> = Pressure increase