

# EC axial fan

with brushless DC motor

Fan housing with guide vanes, Automotive

W3G300-ME46-02 ebmpapst Datasheet

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## Nominal data

|                          |                   |          |
|--------------------------|-------------------|----------|
| Type                     | W3G300-ME46-02    |          |
| Motor                    | M3G084-BF         |          |
| Nominal voltage          | VDC               | 26       |
| Nominal voltage range    | VDC               | 16 .. 32 |
| Method of obtaining data |                   | fa       |
| Speed (rpm)              | min <sup>-1</sup> | 3200     |
| Power consumption        | W                 | 215      |
| Current draw             | A                 | 8.2      |
| Min. ambient temperature | °C                | -40      |
| Max. ambient temperature | °C                | 85       |

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



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## Technical description

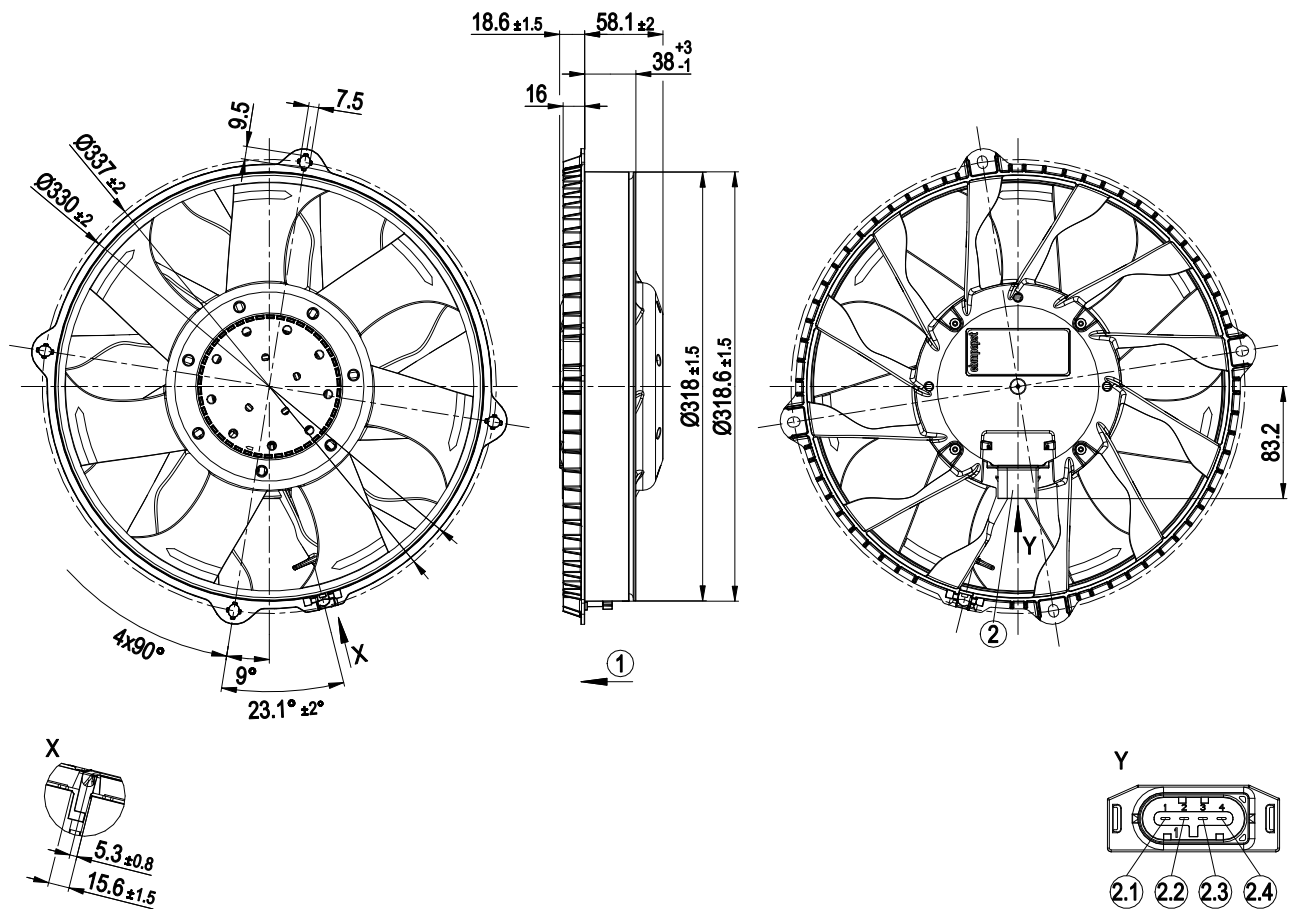
|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                     | 2 kg                                                                                                                                                                                                                                                                                                                                                                                                       |
| Size                                                       | 300 mm                                                                                                                                                                                                                                                                                                                                                                                                     |
| Motor size                                                 | 84                                                                                                                                                                                                                                                                                                                                                                                                         |
| Blade material                                             | PA plastic                                                                                                                                                                                                                                                                                                                                                                                                 |
| Fan housing material                                       | PP plastic                                                                                                                                                                                                                                                                                                                                                                                                 |
| Number of blades                                           | 7                                                                                                                                                                                                                                                                                                                                                                                                          |
| Airflow direction                                          | V                                                                                                                                                                                                                                                                                                                                                                                                          |
| Balancing grade according to DIN ISO 21940-11              | G 16                                                                                                                                                                                                                                                                                                                                                                                                       |
| Direction of rotation                                      | Clockwise, viewed toward rotor                                                                                                                                                                                                                                                                                                                                                                             |
| Degree of protection                                       | Motor IP24 KM, electronics IP6K9K (mating connector installed)                                                                                                                                                                                                                                                                                                                                             |
| Insulation class                                           | "B"                                                                                                                                                                                                                                                                                                                                                                                                        |
| Moisture (F) / Environmental (H) protection class          | H4                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ambient temperature note                                   | Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.                                                                                                                                                       |
| Max. permitted ambient temp. for motor (transport/storage) | +85 °C                                                                                                                                                                                                                                                                                                                                                                                                     |
| Min. permitted ambient temp. for motor (transport/storage) | -40 °C                                                                                                                                                                                                                                                                                                                                                                                                     |
| Installation position                                      | Any                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mode                                                       | S1                                                                                                                                                                                                                                                                                                                                                                                                         |
| Motor bearing                                              | Ball bearing; (sealed)                                                                                                                                                                                                                                                                                                                                                                                     |
| Life expectancy                                            | 40,000 h (typical)                                                                                                                                                                                                                                                                                                                                                                                         |
| Technical features                                         | <ul style="list-style-type: none"> <li>- Locked-rotor detection</li> <li>- Error output (high-side switch)</li> <li>- Power limiter</li> <li>- Load dump (58 V)</li> <li>- Motor current limitation</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Temperature derating</li> <li>- Thermal overload protection for electronics</li> <li>- Reverse polarity protection</li> </ul> |
| Electrical hookup                                          | Plug; Standby current less than 500 µA                                                                                                                                                                                                                                                                                                                                                                     |
| Approval                                                   | EAC                                                                                                                                                                                                                                                                                                                                                                                                        |



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Product drawing



|                                                                                                                                                                                                                                                                    |                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 1                                                                                                                                                                                                                                                                  | Airflow direction "V"                              |
| 2                                                                                                                                                                                                                                                                  | 4-pole plug, pluggable with cable from accessories |
| 2.1                                                                                                                                                                                                                                                                | Diagnostic output                                  |
| 2.2                                                                                                                                                                                                                                                                | PWM/LIN                                            |
| 2.3                                                                                                                                                                                                                                                                | + UB                                               |
| 2.4                                                                                                                                                                                                                                                                | GND                                                |
| Accessory part: Cable (460 mm) with mating connector, part no. 02040-4-1021 not included in scope of delivery<br>4-pole mating connector TE 1-1718628-1, 2x plug contact TE 1-968857-1, 2x plug contact TE 1-968855-1,<br>2x seal TE 828905-1, 2x seal TE 828904-1 |                                                    |

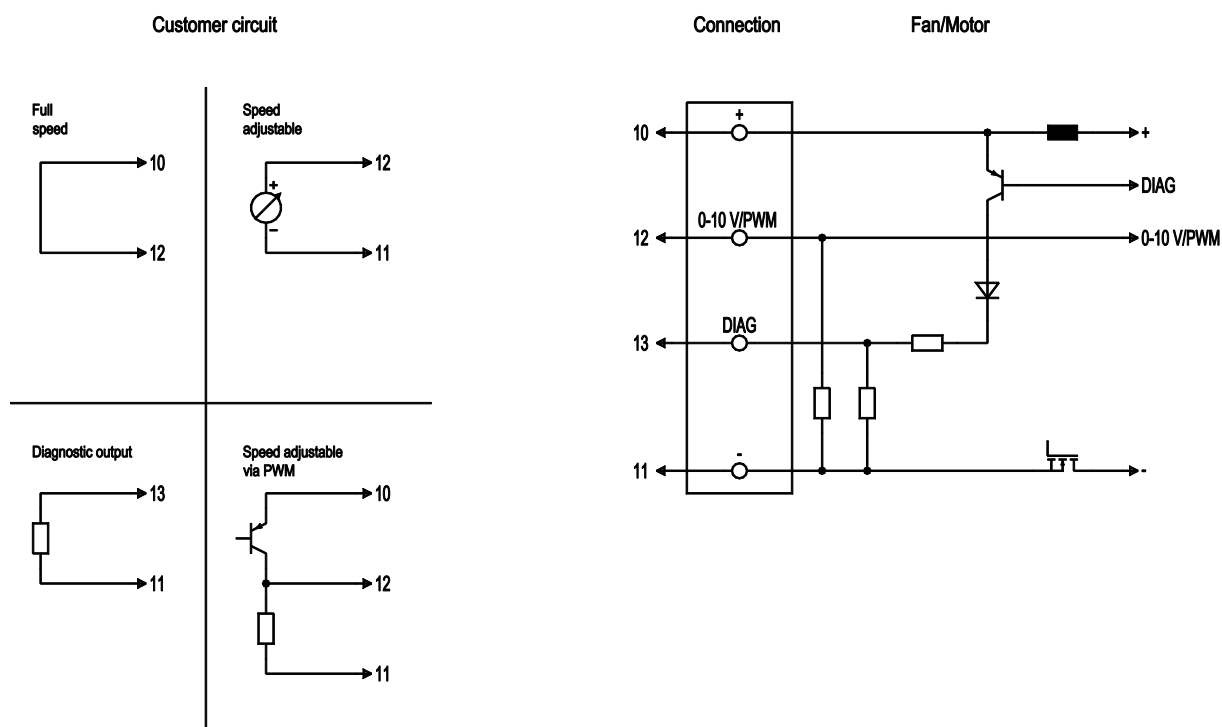


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## Connection diagram



| No. | Conn. | Designation  | Function/assignment                                                                                                                                                                                                   |
|-----|-------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10  | 2.3   | +            | Power supply +                                                                                                                                                                                                        |
| 11  | 2.4   | -            | Power supply -                                                                                                                                                                                                        |
| 12  | 2.2   | 0-10 V / PWM | Control input: $R_i > 27 \text{ k}\Omega$<br>0-10 V: (typ. 0.5 V -> Standby; 1.5 V -> n = min.; 9.5 V -> n = max.)<br>or PWM: (12 V - $U_b$ ; 1 kHz - 10 kHz; typ. < 1% -> standby; 10% -> n = min.; 95% -> n = max.) |
| 13  | 2.1   | DIAG         | Diagnostic output: Open Collector, $I_{\text{source max}} = 10 \text{ mA}$ , $R_{\text{source}} = 2 \text{ k}\Omega$ ; $R_{\text{sink}} = 100 \text{ k}\Omega$<br>fan OK -> low; fan error -> high                    |

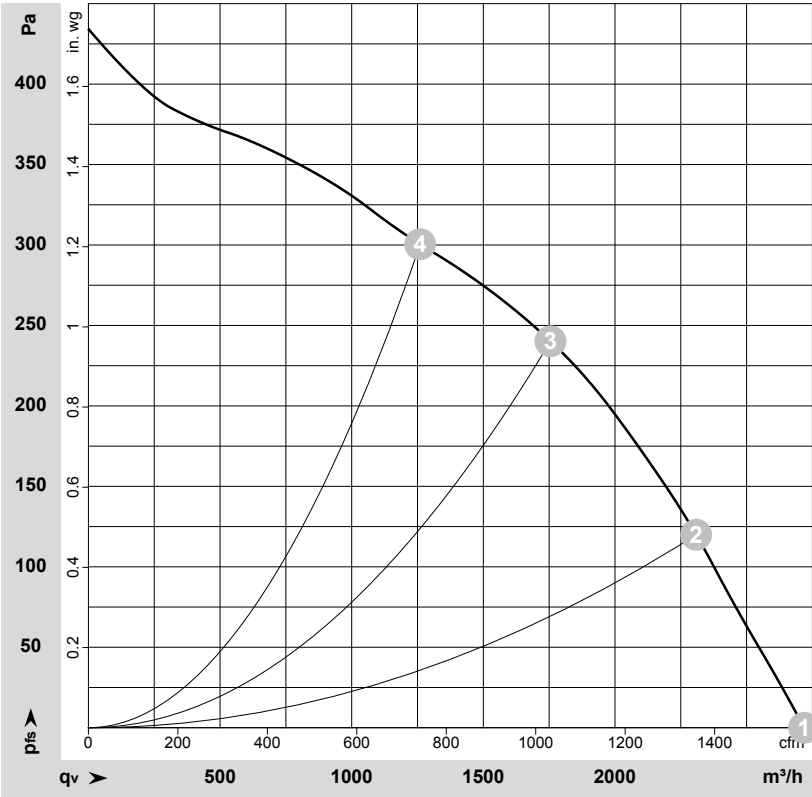


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Curves: Air performance



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

Measurement: LU-210599-1

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  | n                 | P <sub>ed</sub> | I    | LpA <sub>in</sub> | LwA <sub>in</sub> | q <sub>v</sub>    | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub> |
|---|----|-------------------|-----------------|------|-------------------|-------------------|-------------------|-----------------|----------------|-----------------|
|   | V  | min <sup>-1</sup> | W               | A    | dB(A)             | dB(A)             | m <sup>3</sup> /h | Pa              | cfm            | in. wg          |
| 1 | 26 | 3200              | 215             | 8.20 | 78                | 85                | 2720              | 0               | 1600           | 0.00            |
| 2 | 26 | 3145              | 233             | 8.95 | 77                | 83                | 2310              | 120             | 1360           | 0.48            |
| 3 | 26 | 3125              | 241             | 9.26 | 78                | 85                | 1755              | 240             | 1035           | 0.96            |
| 4 | 26 | 3125              | 242             | 9.31 | 80                | 87                | 1260              | 300             | 740            | 1.20            |

U = Voltage · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side · q<sub>v</sub> = Air flow  
p<sub>fs</sub> = Pressure increase

