

W3G300-BV24-01

# EC axial fan

with brushless DC motor

Automotive



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## Nominal data

|                          |                   |          |
|--------------------------|-------------------|----------|
| Type                     | W3G300-BV24-01    |          |
| Motor                    | M3G084-BF         |          |
| Nominal voltage          | VDC               | 26       |
| Nominal voltage range    | VDC               | 16 .. 32 |
| Method of obtaining data |                   | fa       |
| Speed (rpm)              | min <sup>-1</sup> | 3160     |
| Power consumption        | W                 | 205      |
| Current draw             | A                 | 7.9      |
| Min. ambient temperature | °C                | -40      |
| Max. ambient temperature | °C                | 95/110   |
| Starting current         | A                 | 10       |

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

## Data according to Commission Regulation (EU) 327/2011

|                                   |   | Actual | Req. 2015 |
|-----------------------------------|---|--------|-----------|
| 01 Overall efficiency $\eta_{es}$ | % | 46.1   | 29.8      |
| 02 Measurement category           |   | A      |           |
| 03 Efficiency category            |   | Static |           |
| 04 Efficiency grade N             |   | 56.3   | 40        |
| 05 Variable speed drive           |   | Yes    |           |

Data obtained at optimum efficiency level.

The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

|                               |                   |      |
|-------------------------------|-------------------|------|
| 09 Power consumption $P_e$    | kW                | 0.24 |
| 09 Air flow $q_v$             | m <sup>3</sup> /h | 1805 |
| 09 Pressure increase $p_{fs}$ | Pa                | 197  |
| 10 Speed (rpm) $n$            | min <sup>-1</sup> | 3040 |
| 11 Specific ratio*            |                   | 1.00 |

\* Specific ratio =  $1 + p_s / 100\,000\text{ Pa}$

LU-141130



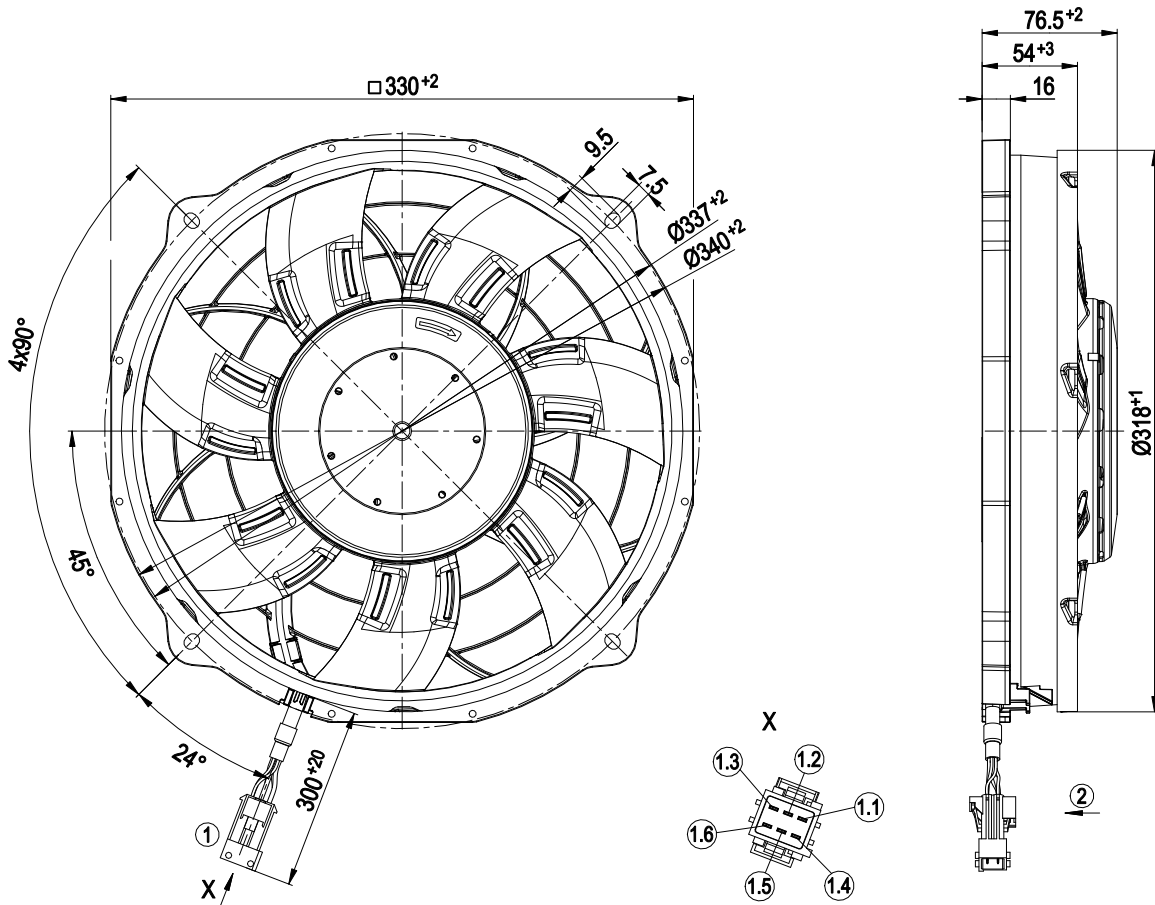
## Technical description

|  |   |
|--|---|
| Weight   | 2 kg  |
| Size   | 300 mm  |
| Motor size   | 84  |
| Blade material   | PA plastic  |
| Fan housing material                                       | PA plastic  |
| Number of blades   | 7   |
| Airflow direction  | V   |
| Balancing grade according to DIN ISO 1940-1                | G 10  |
| 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                                   | Over +95 °C with power derating   |
| Max. permitted ambient temp. for motor (transport/storage) | +110 °C   |
| Min. permitted ambient temp. for motor (transport/storage) | -40 °C  |
| Installation position                                      | Any   |
| Condensation drainage holes                                | None, open rotor  |
| Mode   | S1  |
| Motor bearing  | Ball bearing; (sealed)  |
| Life expectancy  | 40,000 h (typical)  |
| Technical features   | <ul style="list-style-type: none"> <li>- Lowering input</li> <li>- Fault output (high-side switch max. 30 mA)</li> <li>- INVLIN (inverse linear control input)</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>- Overvoltage detection</li> <li>- Thermal overload protection for electronics</li> <li>- Undervoltage detection</li> <li>- Reverse polarity protection</li> </ul> |
| EMC regulations  | ECE R10 Rev. 3  |
| Electrical hookup  | Connector with cable; Standby current less than 500 µA  |
| Motor protection   | Reverse polarity and locked-rotor protection  |
| With cable   | Lateral   |
| Approval   | E1; EAC   |
| Comment  | Type approval number – 036433   |

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Product drawing



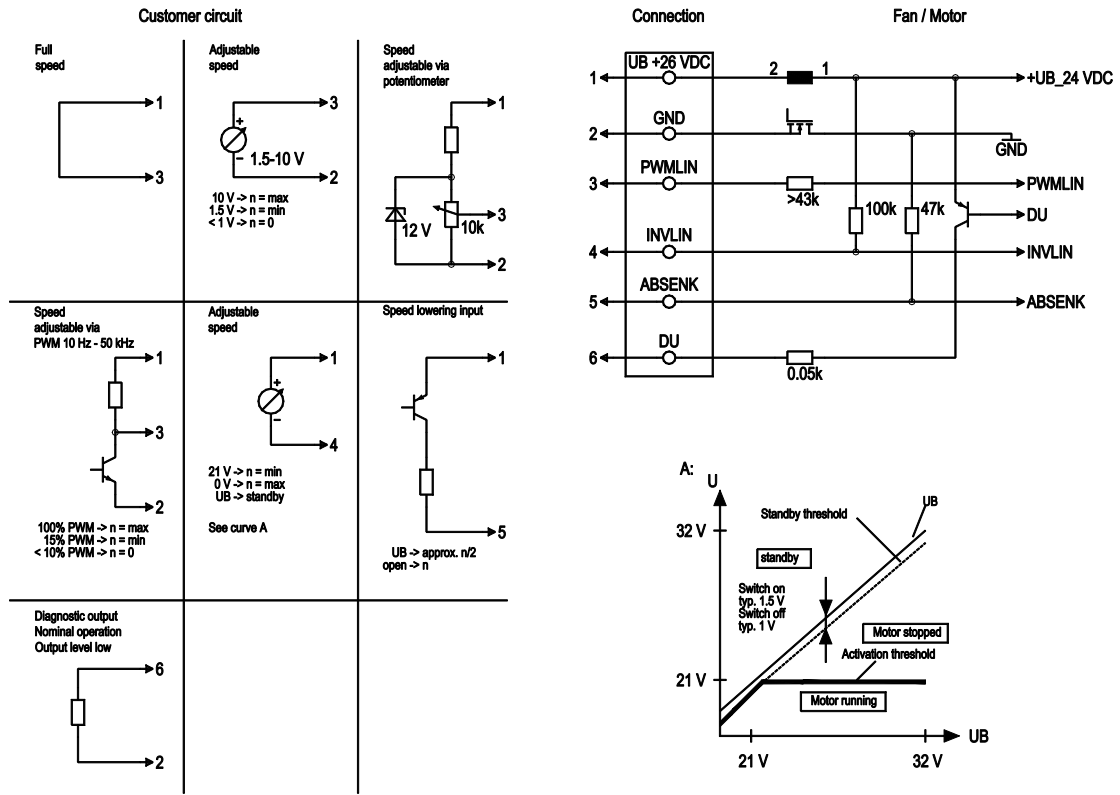
|     |   |
|-----|---|
| 1   | Cable FLRYW 2x 1.5 mm <sup>2</sup> , 4x 0.75 mm <sup>2</sup><br>6-pole connector housing TE 1-962349-1, 2x flat plug TE 2-962916-1, 4x flat plug TE 1-962915-1<br>1x seal TE 963205-1, 2x seal TE 828905-1, 4x seal TE 828904-1 |
| 1.1 | + UB  |
| 1.2 | GND   |
| 1.3 | PWM/LIN   |
| 1.4 | INVLIN  |
| 1.5 | ABSENK  |
| 1.6 | Diagnostic output   |
|     | Accessory part: Cable (460 mm) with mating connector, part no. 02002-4-1021 not included in scope of delivery<br>6-pole mating connector TE 1-963212-1, 4x receptacle TE 929939-1, 2x receptacle TE 929937-1                    |
| 2   | Airflow direction "V"   |



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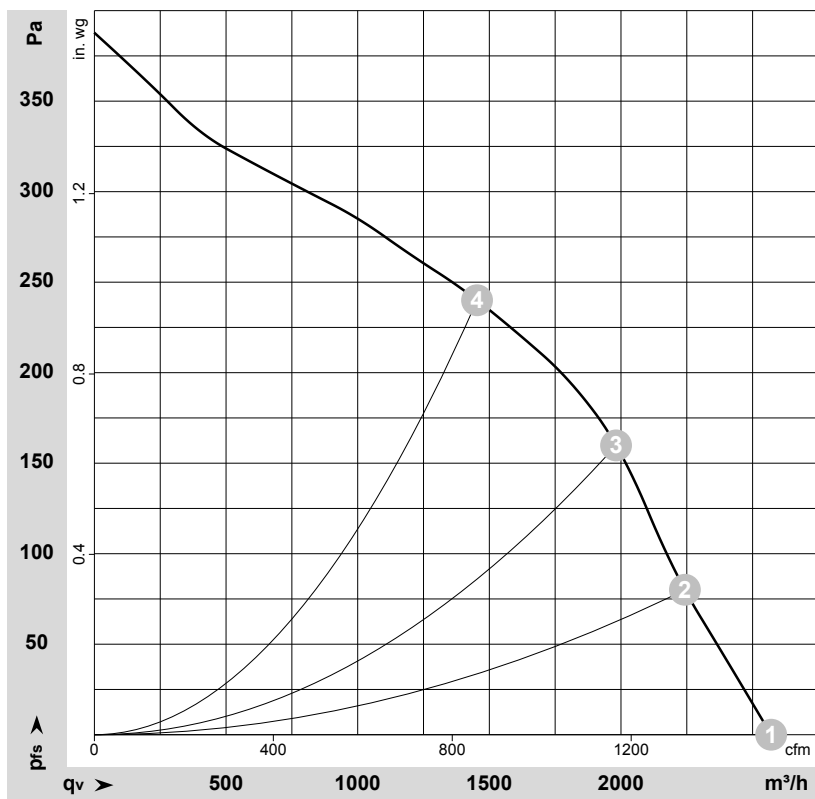
## Connection diagram



| No. | Conn.      | Designation | Function/assignment                        |
|-----|------------|-------------|--|
| 1   | UB +26 VDC | UB +26 VDC  | Power supply 26 VDC                        |
| 2   | GND        | GND         | Power supply GND, reference ground         |
| 3   | PWMLIN     | PWMLIN      | Analog voltage control input 0-10 V or PWM |
| 4   | INVLIN     | INVLIN      | Control input, inverse linear              |
| 5   | ABSENK     | ABSENK      | Lowering input                             |
| 6   | DU         | DU          | Diagnostic output                          |



## Curves: Air performance



$\rho = 1.181 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-141130-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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 | 3160              | 205             | 7.90 | 74                | 82                | 2570              | 0               | 1515           | 0.00            |
| 2 | 26 | 3155              | 217             | 8.35 | 73                | 81                | 2245              | 80              | 1320           | 0.32            |
| 3 | 26 | 3085              | 240             | 9.24 | 73                | 81                | 1980              | 160             | 1165           | 0.64            |
| 4 | 26 | 2960              | 244             | 9.36 | 73                | 80                | 1455              | 240             | 855            | 0.96            |

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

