

W3G385-BS44-01

# EC axial fan

with brushless DC motor  
Automotive



W3G385-BS44-01 ebmpapst Datasheet  
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## Nominal data

|                          |                   |          |
|--------------------------|-------------------|----------|
| Type                     | W3G385-BS44-01    |          |
| Motor                    | M3G084-BF         |          |
| Nominal voltage          | VDC               | 26       |
| Nominal voltage range    | VDC               | 16 .. 32 |
| Method of obtaining data |                   | fa       |
| Speed (rpm)              | min <sup>-1</sup> | 2600     |
| Power consumption        | W                 | 250      |
| Current draw             | A                 | 9.6      |
| Min. ambient temperature | °C                | -40      |
| Max. ambient temperature | °C                | 95/110   |
| Starting current         | A                 | 12       |

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



## Technical description

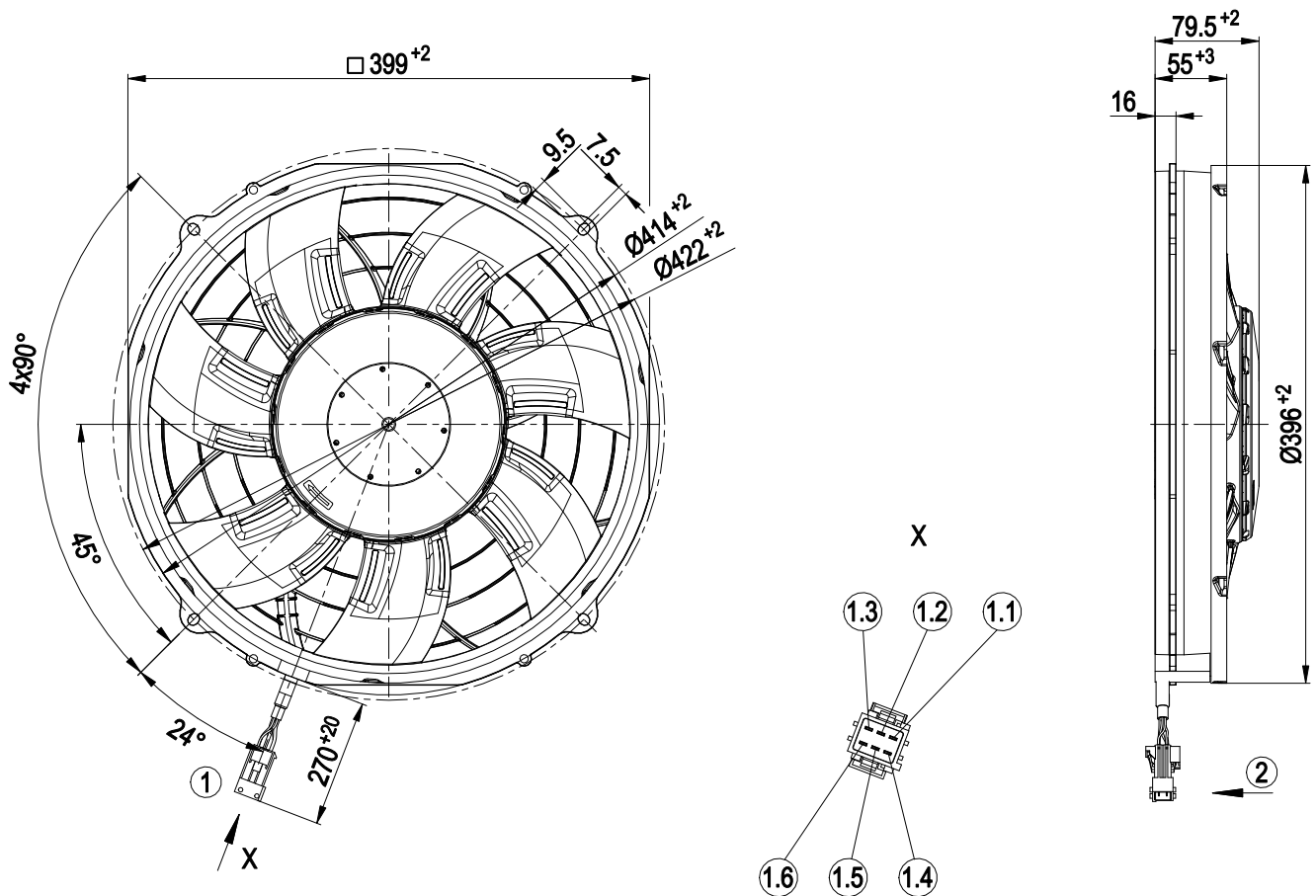
|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                     | 2.7 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Size                                                       | 385 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Motor size                                                 | 84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Impeller material                                          | PA plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fan housing material                                       | PA plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Number of blades                                           | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Airflow direction                                          | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Balancing grade according to DIN ISO 21940-11              | 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>- Tach output</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>- Line undervoltage detection</li> </ul> |
| EMC regulations                                            | According to 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Protection class assignment                                | <p>III; Requires supply with safety extra-low voltage SELV.</p> <p>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.</p>                                                                                                                                                                                                       |
| Approval                                                   | E1; EAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Comment                                                    | Type approval number – 036716                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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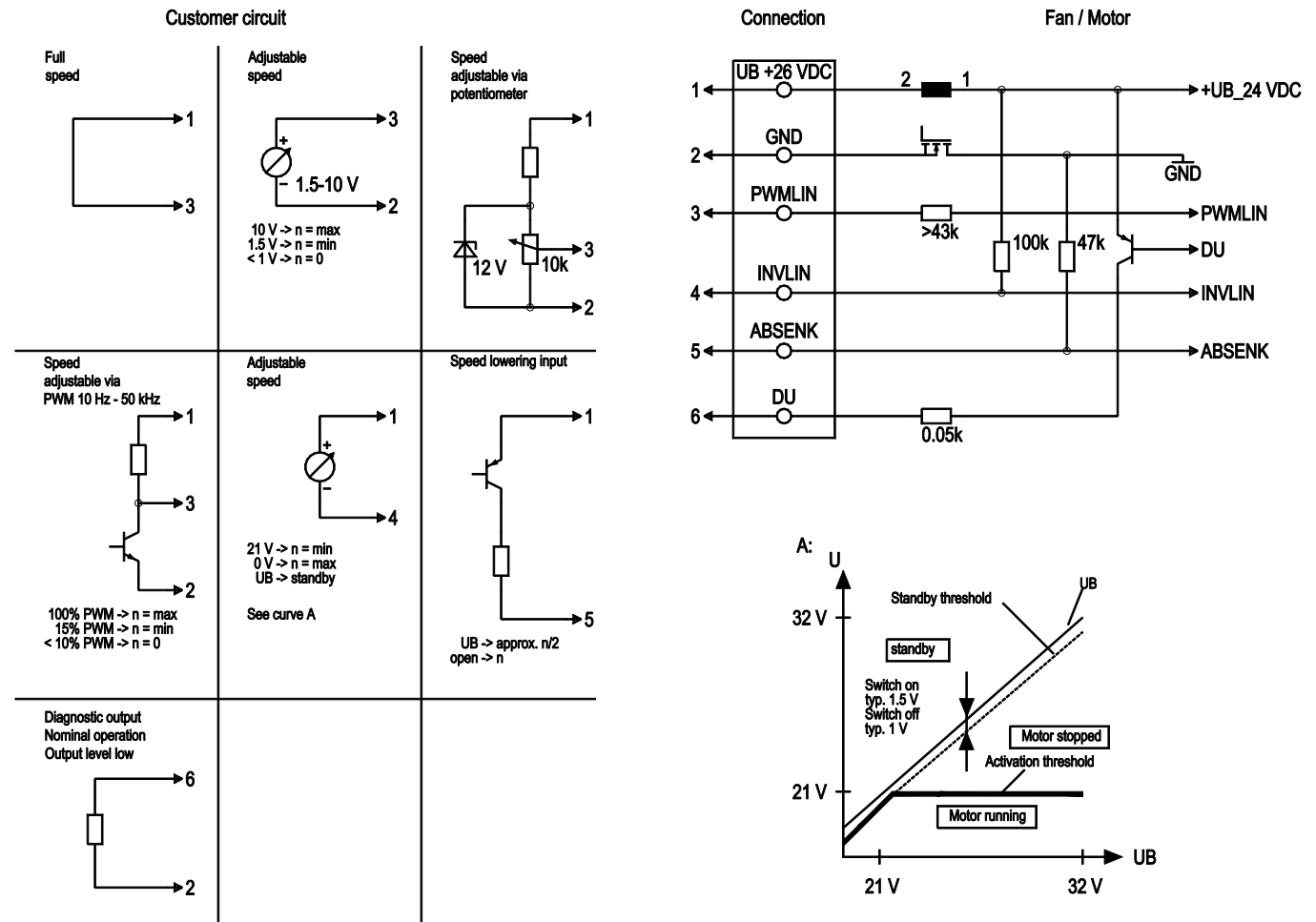
## Product drawing



|     |                                                                                                                                                                                                              |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Cable FLRYW 2x 1.5 mm <sup>2</sup> , 4x 0.75 mm <sup>2</sup>                                                                                                                                                 |
|     | 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"                                                                                                                                                                                        |



## Connection diagram

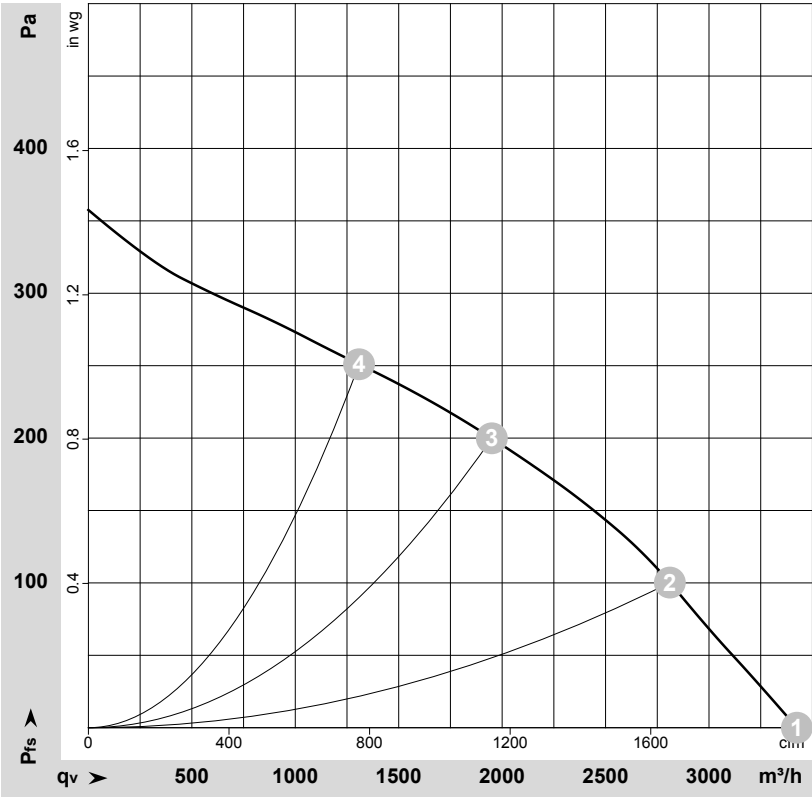


| No. | Conn. | Designation | Function/assignment                        |
|-----|-------|-------------|--------------------------------------------|
|     | 1     | UB +26 VDC  | Power supply 26 VDC                        |
|     | 2     | GND         | Power supply GND, reference ground         |
|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

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## Curves: Air performance



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

Measurement: LU-141094-1

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 | 2600              | 250             | 9.60  | 76                | 84                | 3425              | 0               | 2015           | 0.00            |
| 2 | 26 | 2495              | 273             | 10.47 | 74                | 83                | 2810              | 100             | 1655           | 0.40            |
| 3 | 26 | 2315              | 273             | 10.50 | 73                | 81                | 1950              | 200             | 1150           | 0.80            |
| 4 | 26 | 2215              | 274             | 10.54 | 74                | 82                | 1310              | 250             | 770            | 1.00            |

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

