**W3G300-QX25-23**

# EC axial fan

with brushless DC motor

Automotive

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## Nominal data

| | |
|---|---|
| **Type** | **W3G300-QX25-23** |
| **Motor** | **M3G084-BF** |

| | | |
|---|---|---|
| Nominal voltage | VDC | 26 |
| Nominal voltage range | VDC | 16 .. 32 |
| Method of obtaining data | | fa |
| Status | | prelim. |
| Speed (rpm) | $min^{-1}$ | 3800 |
| Power consumption | W | 400 |
| Current draw | A | 15.0 |
| 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

## Data according to Commission Regulation (EU) 327/2011 (EN 17166)

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 50.4 | 31.6 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 58.8 | 40 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_e$ | kW | 0.46 |
| 09 Air flow $q_v$ | $m^3/h$ | 2050 |
| 09 Pressure increase $p_{fs}$ | Pa | 373 |
| 10 Speed (rpm) n | $min^{-1}$ | 3645 |
| 11 Specific ratio* | | 1.00 |

Data obtained at optimum efficiency level.

* Specific ratio = 1 + $p_{fs}$ / 100 000 Pa

LU-187429

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.

The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

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## Technical description

| | |
|---|---|
| **Weight** | 2.32 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 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** | 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 |
| **Condensation drainage holes** | None, open rotor |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing; (sealed) |
| **Life expectancy** | 40,000 h (depending on load profile and ambient conditions) |
| **Technical features** | - Error output (high-side switch)<br>- Power limiter<br>- Load dump (58 V)<br>- Motor current limitation<br>- Reverse operation (reversal of rotation)<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Temperature derating<br>- Overvoltage detection<br>- Thermal overload protection for electronics<br>- Line undervoltage detection |
| **EMC regulations** | According to ECE R10 Rev.6 |
| **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** | Built-in component, protection class is based on the intended installation.<br>This component for installation may have several local protection classes. This information relates to this component's basic design.<br>The final protection class is based on the component's intended installation and connection. |
| **Approval** | E1; EAC |
| **Comment** | Type approval number – 069119 |



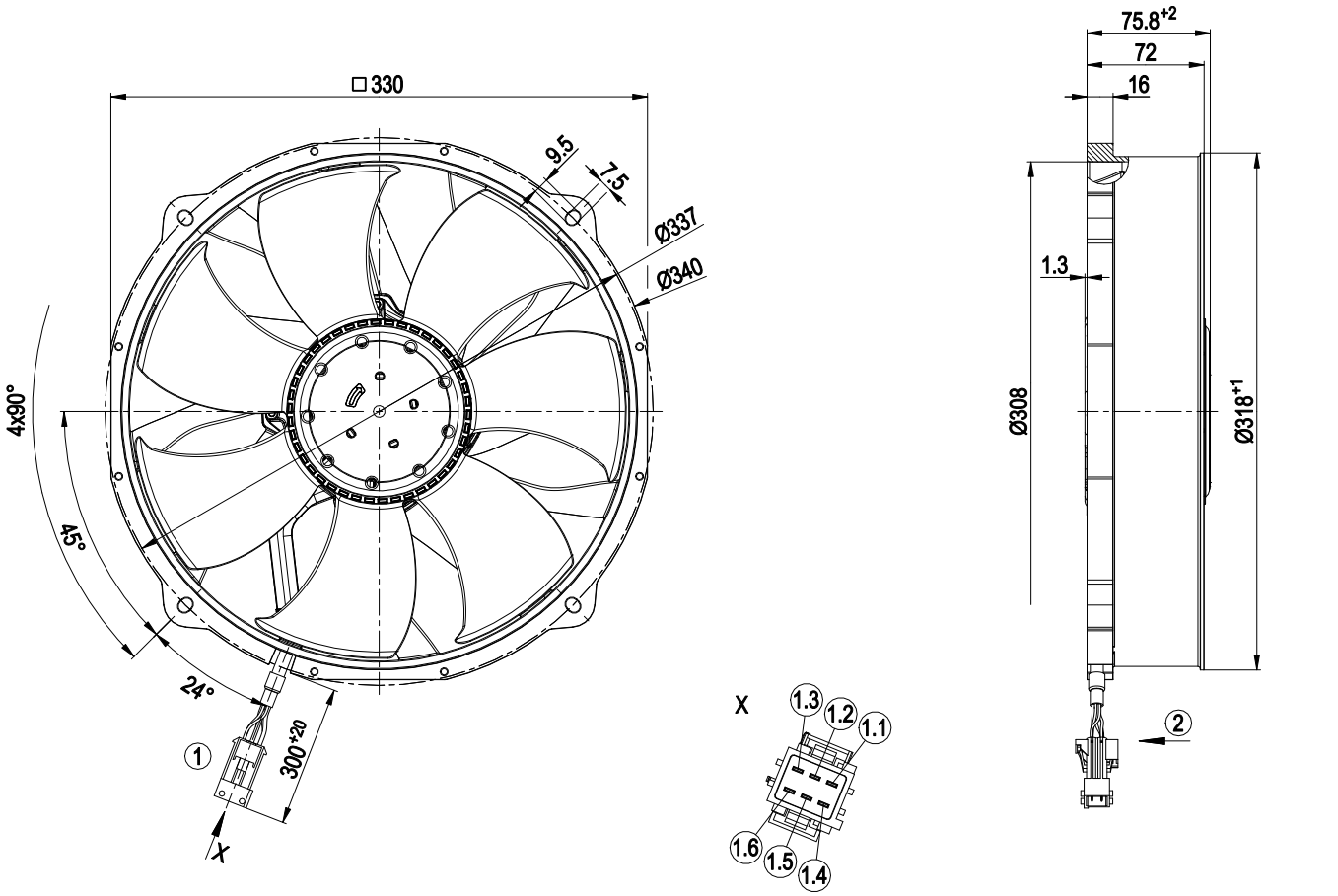
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## Product drawing




| | |
|---|---|
| 1 | Cable FLRYW 2x 3 mm², 3x 0.75 mm² |
| | 6-pole connector housing TE 1-962349-1, 2x flat plug TE 2-962916-1, 3x flat plug TE 1-962915-1<br>1x seal TE 963205-1, 2x seal TE 828905-1, 3x seal TE 828904-1, 1x dummy plug TE 828922-1 |
| 1.1 | + UB |
| 1.2 | GND |
| 1.3 | PWM/LIN |
| 1.4 | not used |
| 1.5 | Reverse |
| 1.6 | Diagnostic output |
| | 6-pole mating connector TE 1-963212-1, 3x receptacle TE 929939-1, 2x receptacle TE 929937-1, 1x dummy plug TE 828922-1 |
| 2 | Airflow direction "V" |



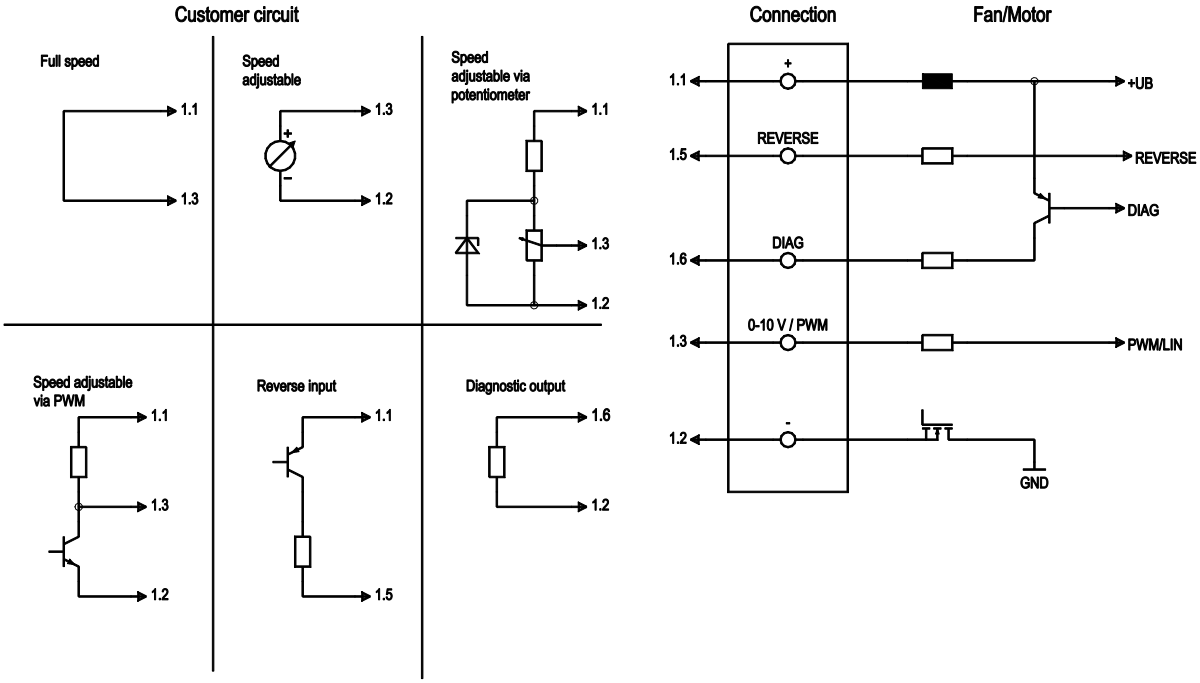
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## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| 1.1 | 1 | + | black | Power supply, see nameplate for voltage range |
| 1.2 | 2 | - | brown | Power supply, see nameplate for voltage range |
| 1.5 | 3 | Reverse | blue | Reversal of rotation input: Ri = 47 kΩ connected to power supply + -> direction of rotation is reversed, or open -> reversal of rotation inactive |
| 1.6 | 4 | DIAG | white | Diagnostic output: Ri = 0.05 kΩ output level in nominal operation -> Low |
| 1.3 | 5 | 0-10 V / PWM | yellow | Control input: Ri > 42 kΩ 0-10 V (typ. <1 V -> n = 0; 1.5 V -> n = min.; 10 V -> n = max.), potentiometer (limit voltage at potentiometer with 12 V Z-diode) or PWM (>12 V; 0.1-50 kHz; typ. <2% -> n = 0; 5% -> n = min. ; 100% -> n = max.) |



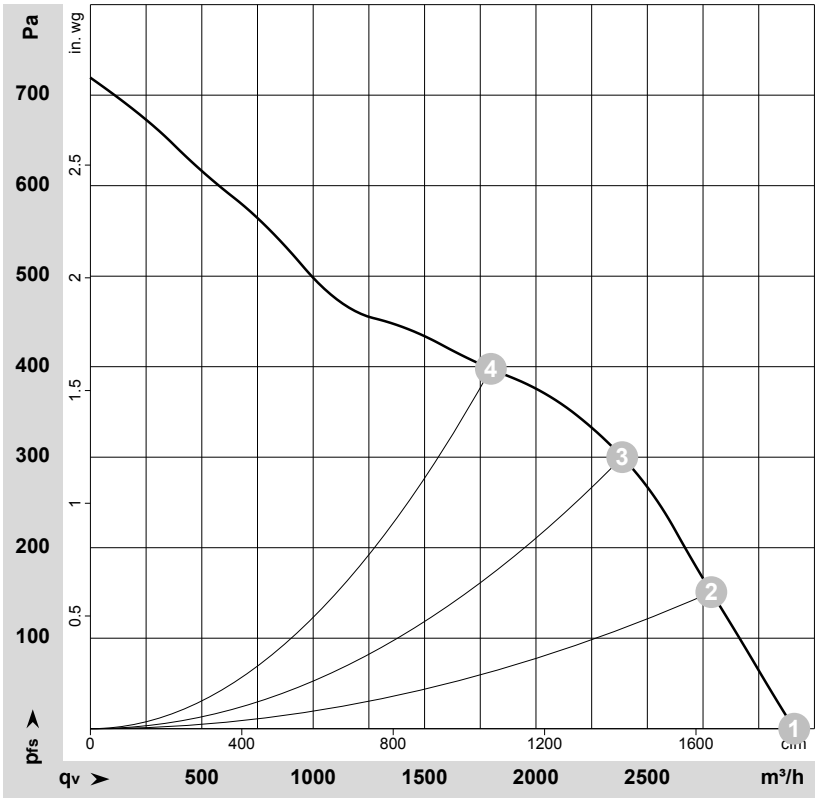
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## Curves: Air performance




ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-187429-1

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 | $P_{ed}$ | I | $LpA_{in}$ | $LwA_{in}$ | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | V | $min^{-1}$ | W | A | dB(A) | dB(A) | $m^3/h$ | Pa | cfm | in. wg |
| 1 | 26 | 3800 | 400 | 15.00 | 80 | 88 | 3160 | 0 | 1860 | 0.00 |
| 2 | 26 | 3725 | 426 | 16.37 | 79 | 87 | 2785 | 150 | 1640 | 0.60 |
| 3 | 26 | 3700 | 465 | 17.89 | 79 | 87 | 2385 | 300 | 1405 | 1.20 |
| 4 | 26 | 3700 | 462 | 17.74 | 82 | 89 | 1800 | 400 | 1060 | 1.61 |

U = Voltage · n = Speed (rpm) · $P_{ed}$ = Power consumption · I = Current draw · $LpA_{in}$ = Sound pressure level intake side · $LwA_{in}$ = Sound power level intake side · $q_V$ = Air flow
$p_{fs}$ = Pressure increase



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