

W3G300-RQ28-56

## EC axial fan

with brushless DC motor

Automotive



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### Nominal data

|                          |                   |          |
|--------------------------|-------------------|----------|
| Type                     | W3G300-RQ28-56    |          |
| Motor                    | M3G074-CF         |          |
| Nominal voltage          | VDC               | 27.5     |
| Nominal voltage range    | VDC               | 16 .. 32 |
| Method of obtaining data |                   | fa       |
| Speed (rpm)              | min <sup>-1</sup> | 3380     |
| Power consumption        | W                 | 320      |
| Current draw             | A                 | 11.5     |
| 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

|                                   |   | Actual | Req. 2015 |
|-----------------------------------|---|--------|-----------|
| 01 Overall efficiency $\eta_{es}$ | % | 42.5   | 30.8      |
| 02 Measurement category           |   | A      |           |
| 03 Efficiency category            |   | Static |           |
| 04 Efficiency grade N             |   | 51.7   | 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                | 0.35 |
| 09 Air flow $q_v$             | m <sup>3</sup> /h | 1755 |
| 09 Pressure increase $p_{fs}$ | Pa                | 277  |
| 10 Speed (rpm) n              | min <sup>-1</sup> | 3385 |
| 11 Specific ratio*            |                   | 1.00 |

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

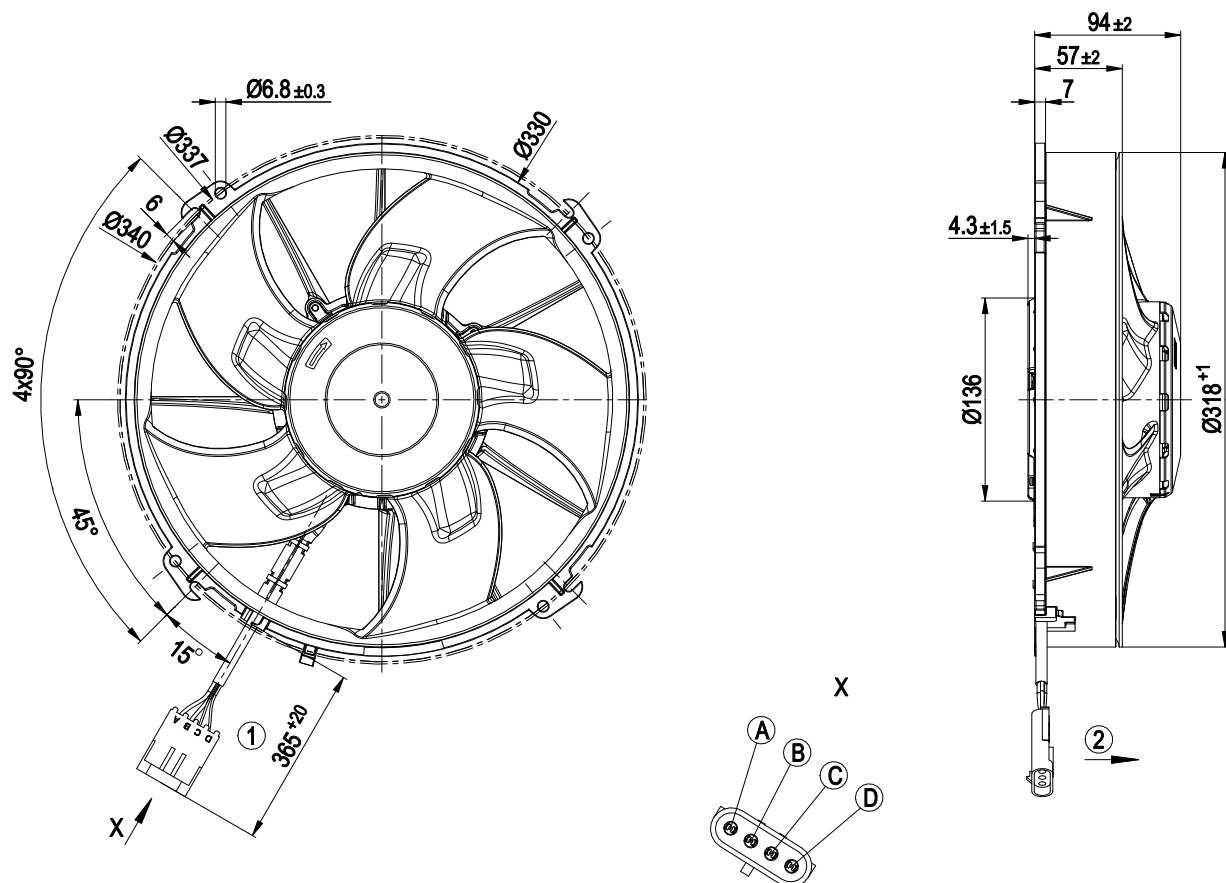
LU-122953



## Technical description

|                                                            |                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                     | 2.5 kg                                                                                                                                                                                                                                                                                                                                                                         |
| Fan size                                                   | 300 mm                                                                                                                                                                                                                                                                                                                                                                         |
| Impeller material                                          | PBT plastic                                                                                                                                                                                                                                                                                                                                                                    |
| Fan housing material                                       | PP plastic                                                                                                                                                                                                                                                                                                                                                                     |
| Number of blades                                           | 5                                                                                                                                                                                                                                                                                                                                                                              |
| Airflow direction                                          | "V"                                                                                                                                                                                                                                                                                                                                                                            |
| Balancing grade according to DIN ISO 1940-1                | G 10                                                                                                                                                                                                                                                                                                                                                                           |
| Direction of rotation                                      | Clockwise, viewed toward rotor                                                                                                                                                                                                                                                                                                                                                 |
| Degree of protection                                       | IP24 KM                                                                                                                                                                                                                                                                                                                                                                        |
| Insulation class                                           | "B"                                                                                                                                                                                                                                                                                                                                                                            |
| Moisture (F) / Environmental (H) protection class          | F4-1                                                                                                                                                                                                                                                                                                                                                                           |
| Max. permitted ambient temp. for motor (transport/storage) | +70 °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                                            | 25,000 h (typical)                                                                                                                                                                                                                                                                                                                                                             |
| Technical features                                         | <ul style="list-style-type: none"> <li>- Load dump protection</li> <li>- Motor current limitation</li> <li>- Soft start</li> <li>- Control input 0-5 VDC</li> <li>- Standstill on cable break</li> <li>- Overvoltage detection</li> <li>- Thermal overload protection for electronics</li> <li>- Line undervoltage detection</li> <li>- Reverse polarity protection</li> </ul> |
| EMC regulations                                            | According to ECE R10 Rev. 3                                                                                                                                                                                                                                                                                                                                                    |
| Electrical hookup                                          | With plug; Standby current less than 500 µA                                                                                                                                                                                                                                                                                                                                    |
| Motor protection                                           | Reverse polarity and locked-rotor protection                                                                                                                                                                                                                                                                                                                                   |
| With cable                                                 | Lateral                                                                                                                                                                                                                                                                                                                                                                        |
| Approval                                                   | E1; EAC                                                                                                                                                                                                                                                                                                                                                                        |

## Product drawing



1 Cable with 4-pole coded plug Packard Electric 12010974

2 Direction of air flow "A"

A + UB (red)

B PWM/LIN (blue)

C CGND (white)

D GND (black)

Socket on customer circuit:

Housing: Packard 12015797

Plug contacts: Packard 120 89188 and Packard 121 24580

Seal: Packard 153 24982 and Packard 153 24983

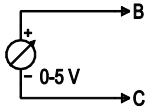
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## Connection diagram

Customer circuit

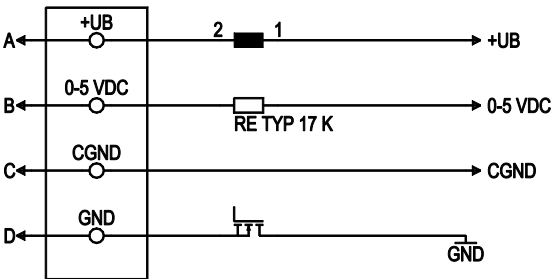
adjustable  
speed



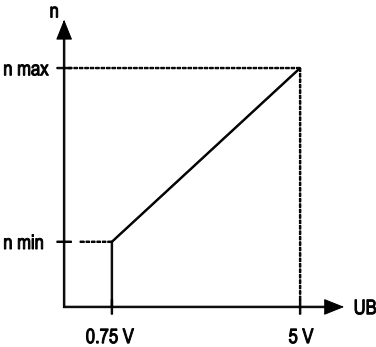
max. perm.  
offset voltage  $\pm 1.5\text{ V}$

Connection

Fan/Motor



adjustable speed  
0 V -> Standby  
0.75 V -> n=min  
5 V -> n=max



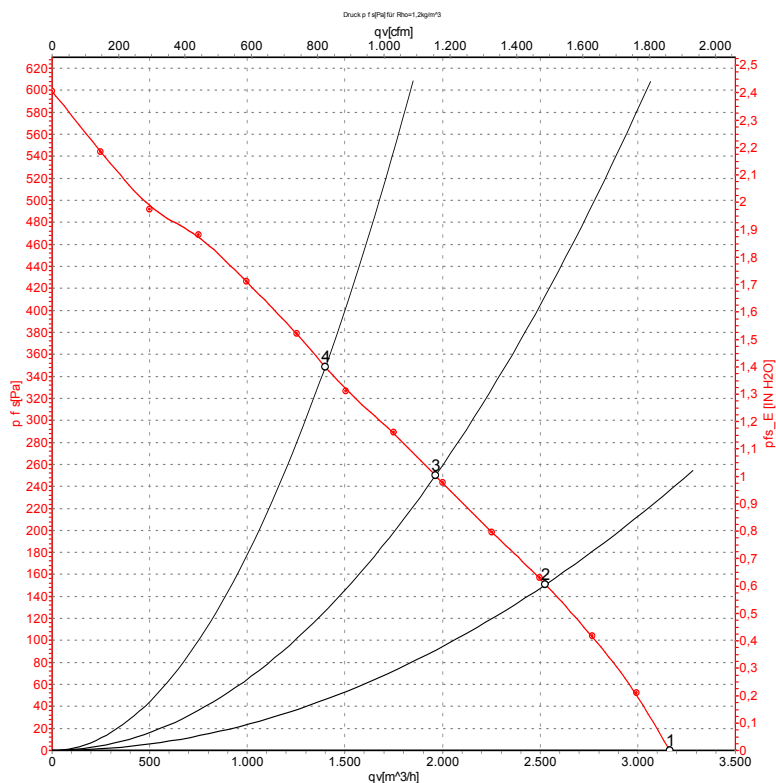
| No. | Conn. | Designation | Function/assignment                                                   |
|-----|-------|-------------|-----------------------------------------------------------------------|
|     | A     | +UB         | Power supply                                                          |
|     | B     | 0-5 VDC     | Analog voltage control input 0-5 V                                    |
|     | C     | CGND        | Control input reference ground, permissible offset $\pm 1.5\text{ V}$ |
|     | D     | GND         | Power supply GND, reference ground                                    |



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## Curves: Air performance



Measurement: LU-122953-1

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> | 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)             | m <sup>3</sup> /h | Pa              | cfm            | in. wg          |
| 1 | 27.5 | 3380              | 320             | 11.50 | 76                | 3165              | 0               | 1860           | 0.00            |
| 2 | 27.5 | 3380              | 334             | 12.14 | 77                | 2525              | 150             | 1485           | 0.60            |
| 3 | 27.5 | 3380              | 344             | 12.46 | 79                | 1965              | 250             | 1155           | 1.00            |
| 4 | 27.5 | 3370              | 375             | 13.63 | 81                | 1400              | 350             | 825            | 1.41            |

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

