

D3G146-LV13-30

# EC centrifugal fan

forward-curved, dual-intake

with housing (flange)



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## Nominal data

|       |                |  |
|-------|----------------|--|
| Type  | D3G146-LV13-30 |  |
| Motor | M3G055-DF      |  |

|                       |     |            |
|-----------------------|-----|------------|
| Phase                 |     | 1~         |
| Nominal voltage       | VAC | 230        |
| Nominal voltage range | VAC | 200 .. 240 |
| Frequency             | Hz  | 50/60      |

|                          |                   |      |
|--------------------------|-------------------|------|
| Method of obtaining data |                   | fa   |
| Speed (rpm)              | min <sup>-1</sup> | 1550 |
| Power consumption        | W                 | 167  |
| Current draw             | A                 | 1.3  |
| Min. back pressure       | Pa                | 0    |
| Min. back pressure       | in. wg            | 0    |
| Min. ambient temperature | °C                | -25  |
| Max. ambient temperature | °C                | 60   |

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 $\eta_{es}$ | % | 35.7   | 32.8      | 09 Power consumption $P_{ed}$ | kW                | 0.16 |
| 02 Measurement category           |   | A      |           | 09 Air flow $q_v$             | m <sup>3</sup> /h | 575  |
| 03 Efficiency category            |   | Static |           | 09 Pressure increase $p_{fs}$ | Pa                | 327  |
| 04 Efficiency grade N             |   | 46.9   | 44        | 10 Speed (rpm) n              | min <sup>-1</sup> | 2465 |
| 05 Variable speed drive           |   | Yes    |           | 11 Specific ratio*            |                   | 1.00 |

Data obtained at optimum efficiency level.

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

LU-162427

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

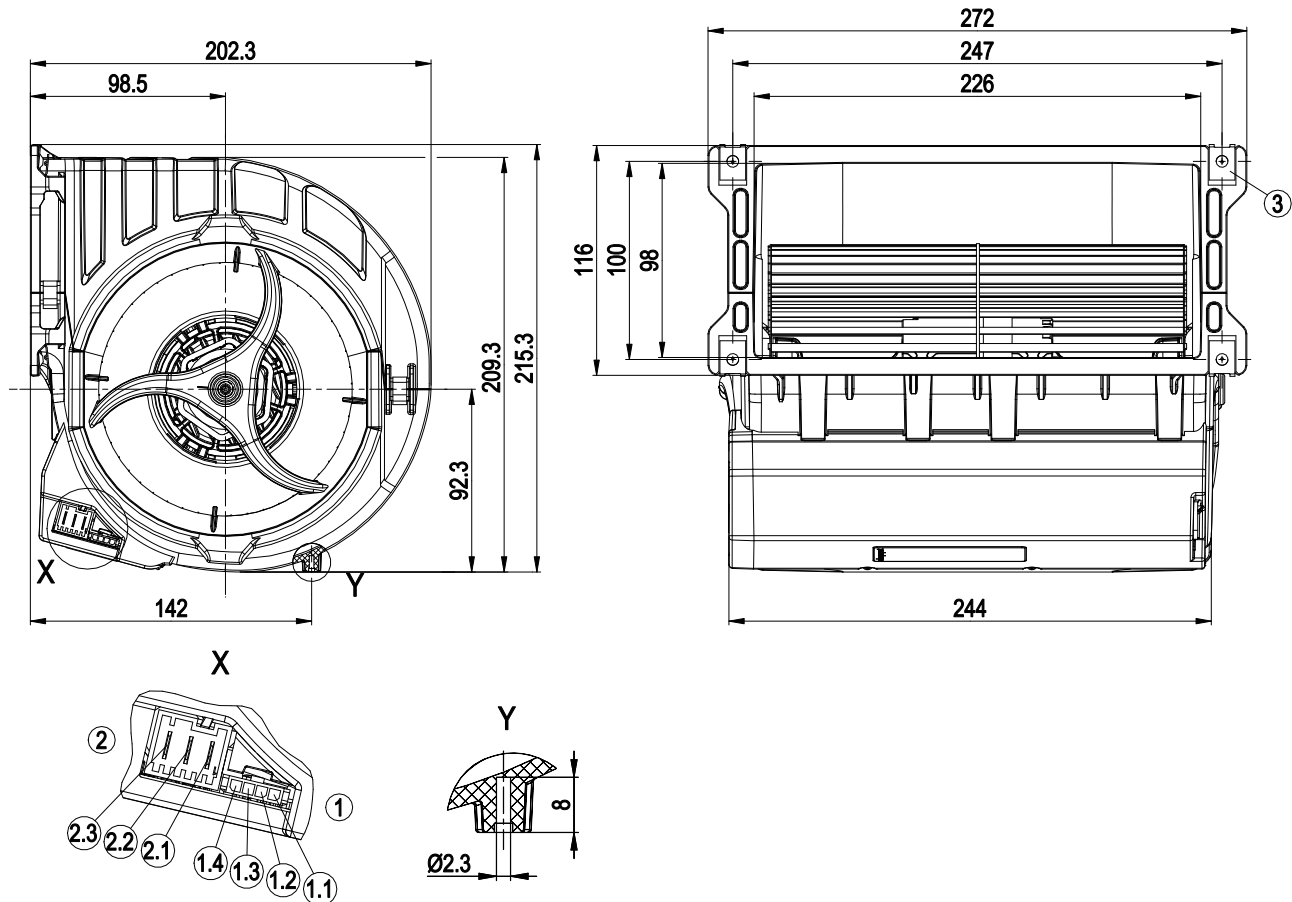
|                                                                            |                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                                     | 2.9 kg                                                                                                                                                                                                                                                                                                                                    |
| Size                                                                       | 146 mm                                                                                                                                                                                                                                                                                                                                    |
| Motor size                                                                 | 55                                                                                                                                                                                                                                                                                                                                        |
| Rotor surface                                                              | Galvanized                                                                                                                                                                                                                                                                                                                                |
| Electronics housing material                                               | PP plastic                                                                                                                                                                                                                                                                                                                                |
| Impeller material                                                          | Sheet steel, galvanized                                                                                                                                                                                                                                                                                                                   |
| Housing material                                                           | PP plastic                                                                                                                                                                                                                                                                                                                                |
| Motor suspension                                                           | Motor vibration-damped on both sides                                                                                                                                                                                                                                                                                                      |
| Direction of rotation                                                      | Counterclockwise, viewed toward rotor                                                                                                                                                                                                                                                                                                     |
| Degree of protection                                                       | Motor IP00, electronics IP20                                                                                                                                                                                                                                                                                                              |
| Insulation class                                                           | "F"                                                                                                                                                                                                                                                                                                                                       |
| Moisture (F) / Environmental (H) protection class                          | H0 - dry environment                                                                                                                                                                                                                                                                                                                      |
| Max. permitted ambient temp. for motor (transport/storage)                 | + 80 °C                                                                                                                                                                                                                                                                                                                                   |
| Min. permitted ambient temp. for motor (transport/storage)                 | - 40 °C                                                                                                                                                                                                                                                                                                                                   |
| Installation position                                                      | Any                                                                                                                                                                                                                                                                                                                                       |
| Cooling hole/opening                                                       | On rotor and stator sides                                                                                                                                                                                                                                                                                                                 |
| Mode                                                                       | S1                                                                                                                                                                                                                                                                                                                                        |
| Motor bearing                                                              | Ball bearing                                                                                                                                                                                                                                                                                                                              |
| Technical features                                                         | <ul style="list-style-type: none"> <li>- Output 10 VDC, max. 1.1 mA</li> <li>- Tach output</li> <li>- Motor current limitation</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from supply</li> <li>- Thermal overload protection for motor</li> </ul> |
| EMC immunity to interference                                               | According to EN 61000-6-2 (industrial environment)                                                                                                                                                                                                                                                                                        |
| EMC interference emission                                                  | According to EN 61000-6-4 (industrial environment)                                                                                                                                                                                                                                                                                        |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | <= 3.5 mA                                                                                                                                                                                                                                                                                                                                 |
| Electrical hookup                                                          | Plug                                                                                                                                                                                                                                                                                                                                      |
| Motor protection                                                           | Thermal overload protector (TOP) internally connected                                                                                                                                                                                                                                                                                     |
| With cable                                                                 | Variable                                                                                                                                                                                                                                                                                                                                  |
| Protection class                                                           | I (with customer connection of protective earth)                                                                                                                                                                                                                                                                                          |
| Conformity with standards                                                  | EN 60335-1; CE; UKCA                                                                                                                                                                                                                                                                                                                      |
| Approval                                                                   | CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1                                                                                                                                                                                                                                                                             |



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## Product drawing

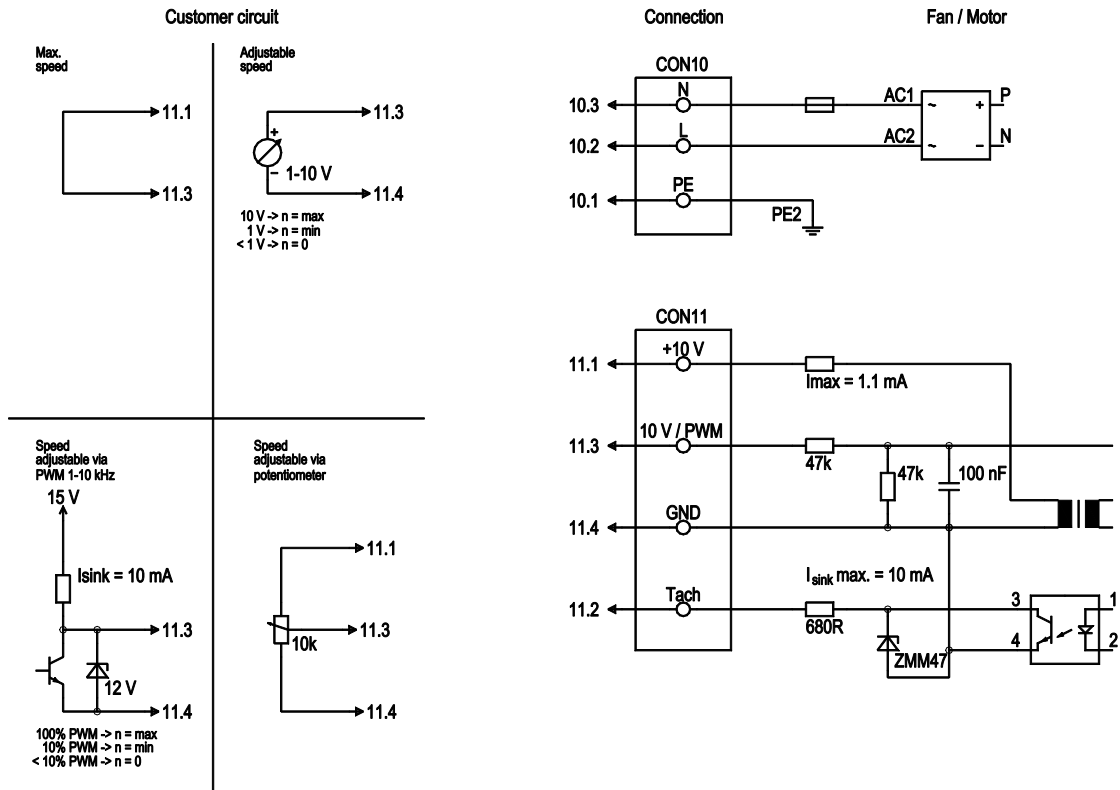


|     |                                                                                                                   |
|-----|-------------------------------------------------------------------------------------------------------------------|
| 1   | Header Molex Micro Fit 3.0 04365 00400 (pluggable with 04364 50400)                                               |
| 1.1 | 10 V                                                                                                              |
| 1.2 | Tach                                                                                                              |
| 1.3 | 0-10 V lin. / PWM                                                                                                 |
| 1.4 | GND                                                                                                               |
| 2   | Connector Lumberg 3642 03 K01 (pluggable with 3626 03 K01)                                                        |
| 2.1 | PE                                                                                                                |
| 2.2 | L                                                                                                                 |
| 2.3 | N                                                                                                                 |
| 3   | 4x sheet metal nut for thread EN ISO 1478-ST4.8 (min. screw length 14.5 mm plus material thickness of attachment) |

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## Connection diagram



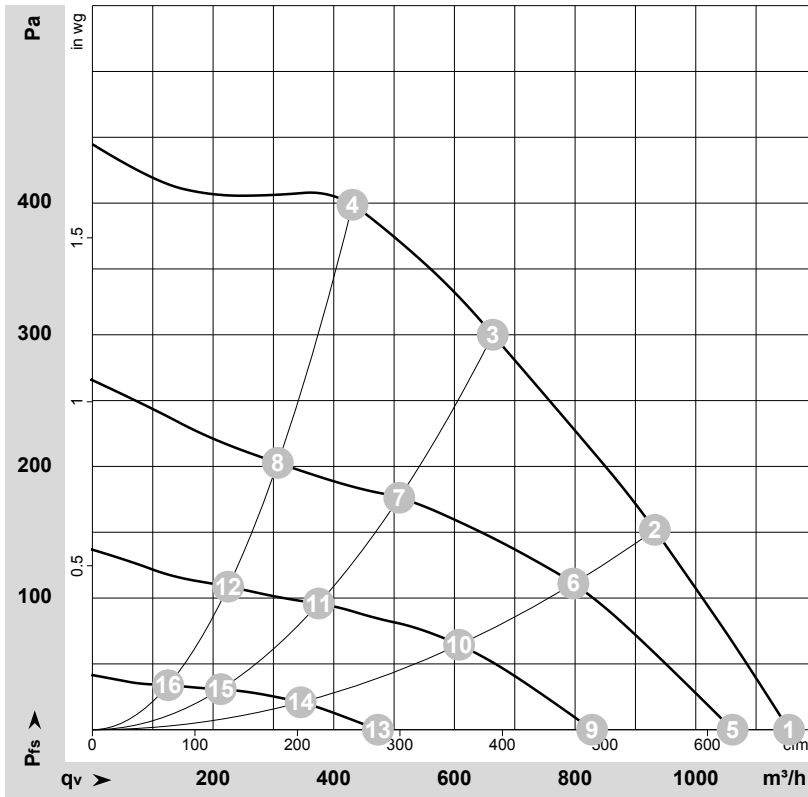
| No.   | Conn. | Designation      | Color        | Function/assignment                                                                                                 |
|-------|-------|------------------|--------------|---------------------------------------------------------------------------------------------------------------------|
| CON10 | 10.1  | PE               | green/yellow | Protective earth                                                                                                    |
| CON10 | 10.2  | L                | black        | Power supply 230 VAC, 50-60 Hz, see nameplate for voltage range                                                     |
| CON10 | 10.3  | N                | blue         | Neutral conductor                                                                                                   |
| CON11 | 11.1  | 10 V/max. 1.1 mA | red          | Voltage output 10 V, 1.1 mA, electrically isolated, not short-circuit-proof                                         |
| CON11 | 11.2  | Tach             | white        | Tach output: Open collector, 1 pulse per revolution, electrically isolated, $I_{sink \text{ max.}} = 10 \text{ mA}$ |
| CON11 | 11.3  | 0-10 V PWM       | yellow       | Control input 0-10 V or PWM, electrically isolated                                                                  |
| CON11 | 11.4  | GND              | blue         | GND connection for control interface                                                                                |

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## Curves: Air performance 50 Hz



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

Measurement: LU-153304-1  
 Measurement: LU-129107-1  
 Measurement: LU-129113-1  
 Measurement: LU-129114-1

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   | f  | 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   | Hz | min <sup>-1</sup> | W               | A    | dB(A)             | dB(A)             | m³/h           | Pa              | cfm            | in. wg          |
| 1  | 230 | 50 | 1550              | 167             | 1.30 | 61                | 74                | 1155           | 0               | 680            | 0.00            |
| 2  | 230 | 50 | 1905              | 167             | 1.30 | 60                | 72                | 930            | 150             | 550            | 0.60            |
| 3  | 230 | 50 | 2350              | 167             | 1.30 | 62                | 74                | 665            | 300             | 390            | 1.20            |
| 4  | 230 | 50 | 2675              | 157             | 1.25 | 65                | 76                | 430            | 400             | 255            | 1.61            |
| 5  | 230 | 50 | 1470              | 145             | 1.14 |                   |                   | 1060           | 0               | 625            | 0.00            |
| 6  | 230 | 50 | 1660              | 110             | 0.89 |                   |                   | 795            | 112             | 470            | 0.45            |
| 7  | 230 | 50 | 1825              | 78              | 0.64 |                   |                   | 510            | 177             | 300            | 0.71            |
| 8  | 230 | 50 | 1935              | 61              | 0.51 |                   |                   | 305            | 203             | 180            | 0.81            |
| 9  | 230 | 50 | 1140              | 63              | 0.54 |                   |                   | 830            | 0               | 485            | 0.00            |
| 10 | 230 | 50 | 1260              | 49              | 0.43 |                   |                   | 610            | 65              | 360            | 0.26            |
| 11 | 230 | 50 | 1345              | 34              | 0.30 |                   |                   | 375            | 96              | 220            | 0.39            |
| 12 | 230 | 50 | 1405              | 27              | 0.26 |                   |                   | 225            | 109             | 130            | 0.44            |
| 13 | 230 | 50 | 685               | 16              | 0.16 |                   |                   | 475            | 0               | 280            | 0.00            |
| 14 | 230 | 50 | 730               | 12              | 0.12 |                   |                   | 345            | 21              | 205            | 0.08            |
| 15 | 230 | 50 | 770               | 9.0             | 0.11 |                   |                   | 215            | 31              | 125            | 0.12            |
| 16 | 230 | 50 | 800               | 8.0             | 0.09 |                   |                   | 125            | 34              | 75             | 0.14            |

U = Voltage · f = Frequency · 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

