**D3G146-AH50-13**

# EC centrifugal fan

forward-curved, dual-intake

with housing (flange)

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ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **D3G146-AH50-13** |
| **Motor** | **M3G074-CF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | fa |
| Speed (rpm) | $min^{-1}$ | 1700 |
| Power consumption | W | 165 |
| Current draw | A | 1.2 |
| 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 ErP Directive

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 43.4 | 32.6 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 54.8 | 44 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_{ed}$ | kW | 0.16 |
| 09 Air flow $q_v$ | $m^3/h$ | 645 |
| 09 Pressure increase $p_{fs}$ | Pa | 350 |
| 10 Speed (rpm) n | $min^{-1}$ | 2400 |
| 11 Specific ratio* | | 1.00 |

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

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

LU-105178

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## Technical description

| | |
|---|---|
| **Weight** | 4.2 kg |
| **Fan size** | 146 mm |
| **Rotor surface** | Painted black |
| **Electronics housing material** | Die-cast aluminum |
| **Impeller material** | Sheet steel, hot-dip galvanized |
| **Housing material** | Sheet steel, hot-dip galvanized |
| **Motor suspension** | Motor vibration-damped on both sides |
| **Direction of rotation** | Clockwise, viewed toward rotor |
| **Degree of protection** | IP44 |
| **Insulation class** | "B" |
| **Moisture (F) / Environmental (H) protection class** | F3-1 |
| **Max. permitted ambient temp. for motor (transport/storage)** | +80 °C |
| **Min. permitted ambient temp. for motor (transport/storage)** | -40 °C |
| **Installation position** | Shaft horizontal |
| **Condensation drainage holes** | None |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Control input 0-10 VDC / PWM<br>- Output 10 VDC max. 1.1 mA<br>- Tach output<br>- Thermal overload protection for electronics/motor |
| **EMC immunity to interference** | According to EN 61000-6-1 |
| **EMC circuit feedback** | According to EN 61000-3-2/3 |
| **EMC interference emission** | According to EN 61000-6-3 |
| **Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)** | <= 3.5 mA |
| **Motor protection** | Thermal overload protector (TOP) internally connected |
| **With cable** | Variable |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 60950-1; EN 60335-1; EN 61800-5-1; CE |
| **Approval** | CSA C22.2 No. 77; UL 2111 |



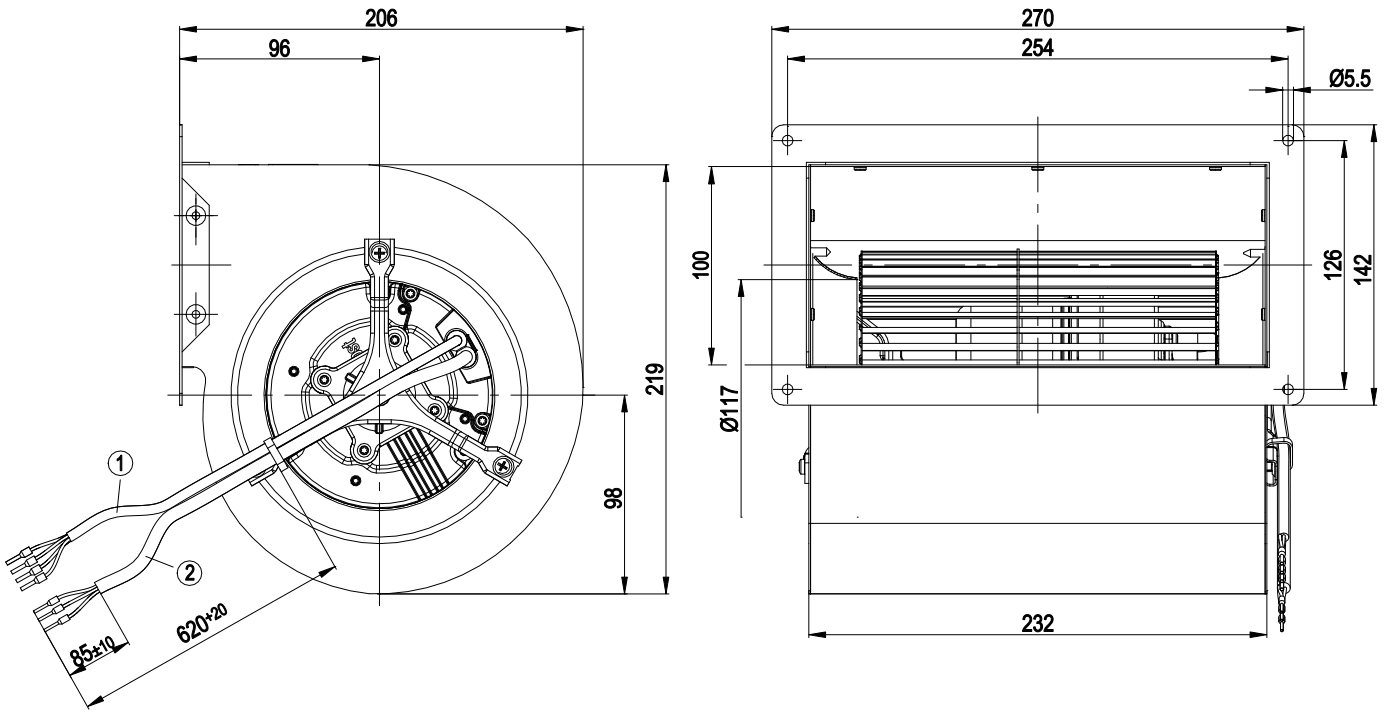
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## Product drawing




| | |
|---|---|
| 1 | Cable AWG22, 4 x crimped ferrules |
| 2 | Cable AWG18, 3 x crimped ferrules |



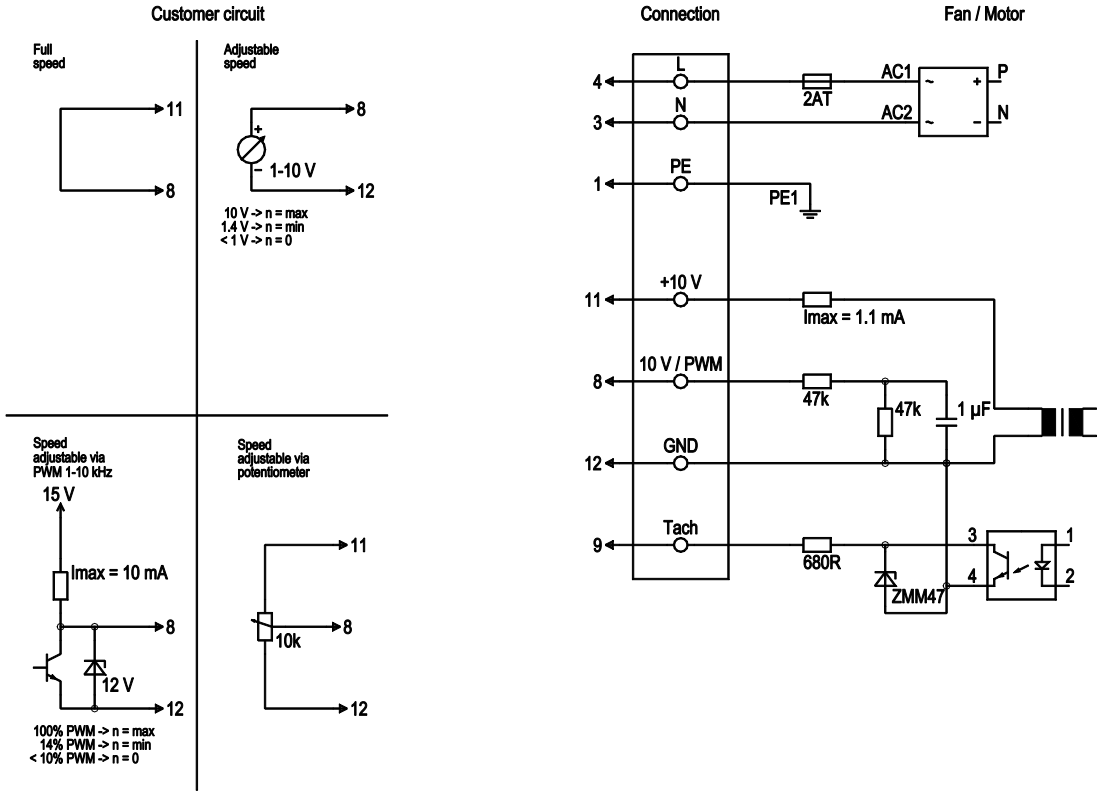
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## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| | 4 | L | black | Power supply 230 VAC, 50-60 Hz, see nameplate for voltage range |
| | 3 | N | blue | Neutral conductor |
| | 1 | PE | green/yellow | Protective earth |
| | 8 | 0-10 V PWM | yellow | Control input 0-10 V or PWM, electrically isolated |
| | 9 | Tach | white | Tach output: open collector, 1 pulse per revolution, electrically isolated |
| | 11 | 10V / max 1.1 mA | red | Voltage output 10 V/max. 1.1 mA, electrically isolated |
| | 12 | GND | blue | GND connection for control interface |



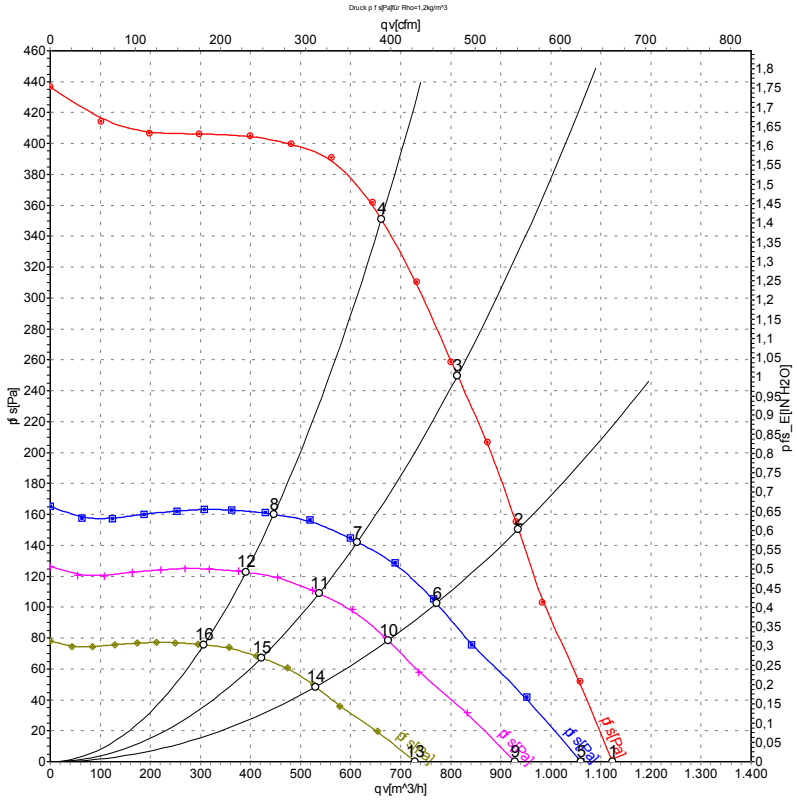
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## Curves: Air performance 50 Hz




Measurement: LU-105178-1

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 | $P_{ed}$ | I | qv | $p_{fs}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | CFM | inH2O |
| 1 | 230 | 50 | 1700 | 165 | 1.20 | 1125 | 0 | 660 | 0.00 |
| 2 | 230 | 50 | 1935 | 165 | 1.20 | 935 | 150 | 550 | 0.60 |
| 3 | 230 | 50 | 2120 | 165 | 1.20 | 815 | 250 | 480 | 1.00 |
| 4 | 230 | 50 | 2370 | 165 | 1.20 | 660 | 350 | 390 | 1.41 |
| 5 | 230 | 50 | 1600 | 139 | 1.00 | 1060 | 0 | 625 | 0.00 |
| 6 | 230 | 50 | 1600 | 93 | 0.68 | 770 | 103 | 455 | 0.41 |
| 7 | 230 | 50 | 1600 | 71 | 0.53 | 615 | 142 | 360 | 0.57 |
| 8 | 230 | 50 | 1600 | 51 | 0.38 | 445 | 160 | 265 | 0.64 |
| 9 | 230 | 50 | 1400 | 93 | 0.67 | 930 | 0 | 545 | 0.00 |
| 10 | 230 | 50 | 1400 | 62 | 0.45 | 675 | 79 | 395 | 0.32 |
| 11 | 230 | 50 | 1400 | 48 | 0.35 | 535 | 109 | 315 | 0.44 |
| 12 | 230 | 50 | 1400 | 34 | 0.25 | 390 | 123 | 230 | 0.49 |
| 13 | 230 | 50 | 1100 | 45 | 0.33 | 730 | 0 | 430 | 0.00 |
| 14 | 230 | 50 | 1100 | 30 | 0.22 | 530 | 49 | 310 | 0.20 |
| 15 | 230 | 50 | 1100 | 23 | 0.17 | 420 | 67 | 250 | 0.27 |
| 16 | 230 | 50 | 1100 | 17 | 0.12 | 305 | 76 | 180 | 0.31 |

U = Power supply · f = Frequency · n = Speed (rpm) · $P_{ed}$ = Power consumption · I = Current draw · qv = Air flow · $p_{fs}$ = Pressure increase



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